



Technical Report on a Foresight Training Course

Editors: Cristiano Cagnin and Fabiana Scapolo



2007

The mission of the IPTS is to provide customer-driven support to the EU policy-making process by researching science-based responses to policy challenges that have both a socio-economic as well as a scientific/technological dimension.

European Commission
Joint Research Centre
Institute for Prospective Technological Studies

Contact information

Address: Edificio Expo. c/ Inca Garcilaso, s/n. E-41092 Seville (Spain)

E-mail: jrc-ipts-secretariat@ec.europa.eu

Tel.: +34 954488318

Fax: +34 954488300

<http://www.jrc.es>

<http://www.jrc.cec.eu.int>

Legal Notice

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

A great deal of additional information on the European Union is available on the Internet.

It can be accessed through the Europa server

<http://europa.eu.int>

PUBSY 6874

EUR 22737 EN

ISSN 1018-5593

Luxembourg: Office for Official Publications of the European Communities

© European Communities, 2007

Reproduction is authorised provided the source is acknowledged

Printed in Spain

Acknowledgements

The training on Foresight for New Member States and Candidate Countries was organised and facilitated by JRC-IPTS. Part of the training was delivered by Dr. Michael Keenan and Dr. Ozcan Saritas, from PREST, to whom the JRC-IPTS is grateful. We would also like to state our gratitude to Professor Ron Johnston, a visiting researcher at JRC-IPTS, for his comments to this report and for his participation in the training as a lecturer and facilitator. JRC-IPTS is also thankful to Kováts Ferenc and Miroslav Marek for giving a presentation on the use of Foresight in their respective countries during the first Module of the training.

The organisers would like to acknowledge the contributions from all participants, their willingness to share knowledge and ideas, and their effort in developing the required tasks. These are:

- Arzu Kepoglu, The Scientific and Technological Research Council of Turkey, TÜBİTAK
- Birute Mikulskiene, Head of Division of Science and Technologies, Department of Science and Technologies Ministry of Education and Science, Lithuania
- Blaž Golob, Slovenian Research Agency, Bled Forum Co-ordinator, Researcher Europe 2025 Project, Slovenia
- Eedi Sepp, Councillor of the Ministry of the Interior, Regional Development Department, Estonia
- George Georghiou, Director of Planning, Planning Bureau, Cyprus
- Gordana Nestorovska, Programme Manager, Helsinki Committee for Human Rights of the Republic of Macedonia
- Jacek Kucinski, Institute for Technological Research, Poland
- Lucia Davidova, Project Manager, BIC Group s.r.o., Slovak Republic
- Kováts Ferenc, National Office for Research and Technology, Hungary, and Chairman of the Steering Committee of the Hungarian Technology Foresight Programme
- Magda Crangasu, Head of Research Department, Ministry of Education and Research, Executive Agency for Higher Education and Research Funding, Romania
- Maria Alexandrova, Applied Research and Communications Fund, Innovation Relay Centre, Bulgaria
- Miroslav Marek, Ministry of Education, Youth and sports of the Czech Republic
- Pilar Rodriguez-Ruiz, Professional Research Assistant, United Nations Industrial Development Organization
- Tatiana Chernyavskaya, Professional Programme Assistant, United Nations Industrial Development Organization

The contents and ideas expressed in this report should not be taken as indicating a position of the people mentioned above. The responsibility relies fully with the editors of the report. The presentations given during the training were adapted to be included in the report and each chapter indicates the name of the authors, whenever relevant, who should receive all credit for the information provided. We would like to thank the authors for allowing us to use this material.

Table of Contents

Acknowledgements	1
Executive Summary of the Training	3
Introduction	6
Chapter 1: the evolution of Foresight practice	8
Chapter 2: possible rationales for Foresight	12
Chapter 3: designing and organising a Foresight exercise	15
Chapter 4: running and managing a Foresight exercise	19
Chapter 5: general methods used in Foresight	23
Chapter 6: getting prepared for the practical work – designing, organising and practising Foresight in context (applying systems thinking to Foresight).....	27
Chapter 7: summary of practical work developed by participants and their assessment of the training	31
Chapter 8: JRC-IPTS lessons learned and implications for future training activities as well as on how to facilitate Foresight in NMS and CC	37
Annex 1: participants' final projects.....	40

Executive Summary of the Training

The supply of Foresight training courses in the past five to ten years saw a substantial growth. Before conceiving this training course a scanning of the international market was undertaken in order to identify the variety of methodological approaches available in designing and implementing Foresight training courses. These usually vary from a one-day to a one-week course. Those internationally regarded as best in class always use a certain mix of theoretical lessons with some kind of group work where participants are asked to think about hypothetical situations to apply the learning provided. For courses using such an approach most often participants are evaluated by two to three selected facilitators and this evaluation is based on a presentation of the practical work developed during the course.

Building on this but trying to test a new methodological approach to increase the learning effect and awareness rising of participants, the Foresight training for New Member States and Candidate Countries (NMS and CC) was devised in two Modules. Participants were requested to commit themselves to attend both Modules as the second Module would build on the lessons learned in the first one and some work that would have to be carried out in the period between the two Modules.

The approach chosen was one of mixing theoretical and practical sessions throughout the training. This would enable participants to better understand the concepts being given and to apply these within the individual work they were requested to undertake during the training. Participants had to start a Foresight project that could be realistically implemented in their own countries and could encounter some policy support. This individual work started to be sketched during the training towards the end of Module 1. Participants had to improve their individual projects in between the two Modules, during Module 2, as well as after the delivery of the second Module.

Participants were therefore required to stay until the end of each Module. Moreover, the programme was designed in a way that would enable them to have a complete picture and understanding of the issues being discussed only near the end of each Module.

While devising the training JRC-IPTS asked all participants to answer two questions designed both to assess their previous knowledge on the discipline and to ensure that the training would address their individual needs and expectations. These questions were: (i) what does Foresight mean to you, to your organisation, and to your country? and (ii) what expectations do you have for the Foresight training course? Through the answers to these questions JRC-IPTS was able to assess that the level of knowledge of participants about Foresight was varied, with some having a better grasp than others. For this reason the training was developed in a way that would start from basics in an attempt to bring all participants to the same understanding of concepts and to a shared level of knowledge by the end of the training activity.

In addition, JRC-IPTS asked participants to familiarise themselves with the FOR-LEARN Online Foresight Guide¹ prior to their arrival in Seville. The FOR-LEARN Online Foresight Guide is presenting currently available Foresight know-how and experiences to Foresight managers, practitioners, users and stakeholders. It is primarily targeting newcomers in the field. It builds on knowledge collected through literature screening and interviews with Foresight experts. It covers the four main aspects of a Foresight project:

¹ The FOR-LEARN Online Foresight Guide is part of the FOR-LEARN project and can be accessed at: http://forlearn.jrc.es/guide/0_home/index.htm

- Why to embark on a Foresight exercise (is Foresight the right tool in such a context and according to the expected outcomes and resources available)?
- How to design a Foresight exercise (what should be taken into account before launching an exercise)?
- How to run a Foresight exercise (what should be taken into consideration to enable the exercise to be both manageable and adaptive to needs)?
- How to follow up a Foresight exercise (what is the importance in diffusing and evaluating results, as well as monitoring impacts)?

The programme of the first Module (April 20-21) included theoretical lessons handled by experts² on possible rationales for Foresight and the potential role of Foresight in NMS and CC; the critical steps of designing, organising and managing a Foresight exercise; general methods used in Foresight; and the need for a systemic view. Moreover, participants engaged in a practical session to apply the learning provided in order to start designing an exercise taking into consideration the context of each participating country. Here the interest, approach and coverage were diverse (for example: from regional to national, looking at the whole innovation system or at the tourist sector, among others). The practical session also helped participants to better understand the material presented and the need to clarify from the outset the system (and subsystems) they are looking at as well as its relationships with other systems. This Module ended by introducing the second Module and the work participants would need to complete between the two Modules.

Participants were then asked to carry out some work between the two Modules and to use the FOR-LEARN Online Foresight Guide (beyond the presentations given during Module 1) as a framework. The first deadline was set for a month after the end of Module 1, when participants had to assess the first draft of their projects plan by responding to a set of questions that were posted to them (see chapter 7). The training facilitators³ had one week to give feedback to participants who then had to return a second improved draft after two more weeks. A Yahoo group was developed by PREST and was managed in collaboration with JRC-IPTS. This platform is where the presentations given during the training and the participants' work were posted as well as where the facilitators of the training maintained a continuous dialogue with participants.

The second Module (June 12-13) started with a report back from the work undertaken by all participants followed by interactive and practical sessions mixed with theoretical lessons. The Module included the presentation of three selected methods in depth as well as sessions where all projects were discussed with the training facilitators individually. Participants were asked about the methods that they were most interested in learning after having had a general theoretical overview of Foresight methods in Module 1. This allowed JRC-IPTS to better design Module 2. The training program was then adapted to deliver the three methods that received the most votes: Delphi, Scenarios; and Roadmapping.

At the end of Module 2 participants were able to clearly set the objectives, focus and basic structure of their projects and were ready to choose the methods to apply in order to achieve the expected results outlined in each project.

The training approach was one of active learning based on a feedback loop where the training facilitators were continuously trying to bring all participants to a higher level of understanding

² In Module 1 Dr. Fabiana Scapolo and Dr. Philine Warnke from JRC-IPTS handled one lecture each. Dr. Michael Keenan and Dr. Ozcan Saritas, from PREST, delivered a number of lectures in Modules 1 and 2. Professor Ron Johnston joined them in the delivery of Module 2.

³ In Module 1 these were Dr. Michael Keenan and Dr. Ozcan Saritas, both from PREST, and Dr. Fabiana Scapolo and Dr. Cristiano Hugo Cagnin, both from JRC-IPTS. Professor Ron Johnston joined them in Module 2.

through questioning, commenting and stimulating them to 'sleep-over' and re-think the individual work they were carrying out. Participants were unanimous in saying that the learning by doing interactive approach adopted as well as the sharing of experiences and ideas between participants and facilitators was effective. The adopted approach allowed a quite outstanding evolution in the participants' individual projects. The assessment of their work shows that the objectives proposed from the outset were all attained. These can be summarised as:

- Raised awareness among participants of the benefits of using Foresight as a policy support instrument.
- Participants had been guided through and familiarised with the basic concepts of Foresight and the main steps involved in designing a Foresight exercise.

Overall it is possible to state that the methodological approach adopted was regarded as a success and that most participants did achieve a shared understanding of Foresight at the end of the training. The main elements that have contributed to the achievement of the training objectives were:

- Practical individual and group sessions during the training.
- Individual face-to-face sessions with the training facilitators during the training.
- Group discussions to debate individual projects during the training.
- The work participants had to engage in between the two Modules and the continuous dialogue maintained with each individual participant during this time.

On the lessons learned it is possible to state the crucial role that the practical sessions had in enabling participants to cope with the amount of information being delivered. In this regard future trainings should take into account that lectures should be no longer than thirty minutes and theoretical sessions should always be followed by a practical exercise. Furthermore, it is also critical to maintain continuous communication (for example by setting a Yahoo group) with participants both to keep momentum, so participants are constantly reminded to reflect on their projects, and to support participants in evolving into higher levels of understanding.

It is believed that JRC-IPTS has identified through this training and the lessons it provided an effective platform or methodological approach designed in two Modules. Such platform should therefore be further tested, improved and adapted both to the specific contexts and current challenges of individual countries in order to facilitate Foresight in NMS and CC.

Introduction

The training activity being reported here has been developed under the Foresight initiative launched in 2005 in the frame of the JRC Enlargement and Integration Action (http://www.jrc.cec.eu.int/default.asp@sz=what_we_do&sz=enlargement_support.htm).

The Joint Research Centre (JRC) is playing an important role in providing scientific and technological support for EU enlargement and integration. On the basis of JRC's mission of supporting EU policies, its Institutes and the special working group entrusted with the overall co-ordination of the JRC's Enlargement and Integration Action are actively supporting the candidate countries (CCs) on their way towards their accession to the European Union and promoting the integration of the New Member States (NMS).

The aim of this initiative is to provide assistance to any New Member State (NMS) and Candidate Country (CC) who may wish to carry out, or indeed may already be carrying out, its own Foresight exercises at a regional, sectoral or national level. The support that the JRC can provide is to share its knowledge and experience in this area, in particular so that those planning such exercises are better able to estimate the resource and organisational requirements. The stimulus for this initiative has in part been specific requests from several of NMS and CC countries for such assistance. Moreover, the JRC also manages to work as the node of a network that facilitates the interaction between different stakeholders.

In order to ensure that the initiative is properly targeted at individual country's needs, the first activity was to set up a Steering Group of Foresight practitioners and users with participants from each NMS and CC country. The first task of the Steering Group was to assess needs and knowledge gaps and to see how best to reinforce the learning cycle amongst its Foresight professionals.

Based on the results of the assessment stage a number of issues were discussed for further action and support. The aim was to take stock of existing Foresight activities and lessons learned in NMS and CC and to assess support actions for planned Foresight activities. The main need raised was that useful support should consist of a problem-oriented training approach.

This need corresponded with the activities been undertaken under the FOR-LEARN project⁴ (<http://forlearn.jrc.es/index.htm>), which is being carried out jointly by the European Commission DG Research (DG RTD) and the DG JRC at the Institute for Prospective Technological Studies (IPTS). The reason for this is that, amongst its tasks, the FOR-LEARN project is aiming to organise problem-oriented workshops to exchange lessons learned and experiences on specific themes related to the process and use of Foresight. Therefore, through the learning and experience gained through these workshops, the JRC-IPTS was in the right position to offer a training approach that would meet the NMS and CC current needs. Moreover, one of the objectives of the FOR-LEARN project is to diffuse the use of Foresight as a policy supporting tool, especially for newcomers in the field which is the case of most NMS and CC.

Taking into consideration the above mentioned background, JRC-IPTS addressed the Members of the Steering Group to ask them to identify within their countries a suitable person that would benefit from attending Foresight training. This person should preferably be in a position to apply Foresight in their country either at national, regional or sectoral level, or to be in the position to

⁴ Support to mutual learning between Foresight managers, practitioners, users and stakeholders of policy-making organisations in Europe

commit him or herself to diffuse the use of Foresight in the country, or to be in a position to influence a decision to start an exercise in the country. After an assessment of the recommended people JRC-IPTS developed the list of invited participants.

The training was also used to capitalise on already existing Foresight training activities organised by other organisations (i.e. UNIDO). Therefore, beyond inviting members from NMS and CC to the training, the JRC-IPTS also invited UNIDO to participate by sending two representatives. The intention was to establish a collaborative partnership between JRC-IPTS and UNIDO within this action in order to leverage rather than duplicate efforts. Both institutions have been in close dialogue since seeking to find common objectives where collaboration can take place to strengthen Foresight training capabilities in Europe.

The training was designed in a way that would raise participants' awareness of the potential of Foresight as a policy support tool in NMS and CC and considering each participating country particular context, as well as to provide the practical knowledge needed within these countries to enable them to conduct their own Foresight activities. The basic idea behind this training was to share current Foresight knowledge and experiences between the participating countries as well as to bring all participants to a common level of Foresight understanding.

This report is structured in two main parts, one more theoretical outlining the lectures given during the training and another more practical summarising the work developed by participants. Chapter 1 shows a brief evolution of Foresight activities and its main characteristics and practice over time. Chapter 2 describes possible rationales for Foresight to better understand what Foresight is, and also to clarify why one is embarking upon Foresight and if Foresight can help to address the challenges being tackled.

Chapters 3, 4 and 5 outline the main elements which should be taken into account in any Foresight exercise. These constitute the basic steps of any Foresight project, which are described in depth in the FOR-LEARN Online Foresight Guide. For this reason Chapters 3, 4 and 5 present mainly what is considered to be complementary and adding value to what is already available in the FOR-LEARN Online Foresight Guide. In this regard, Chapter 3 presents the main elements to be considered when designing and organising a Foresight project with useful and practical tips whenever relevant. Chapter 4 highlights those elements that can and should be taken into account while running and managing a Foresight exercise. Concluding the more theoretical part of this report, Chapter 5 outlines the importance of formal methods in a Foresight exercise as well as its functions, typology and classification, and finalises by briefly describing the French approach.

Chapter 6 frames the practical work by showing that any Foresight project is embedded in a context and that one must take into account both the system and subsystems that the exercise is focusing upon as well as its relationships with other systems. Chapter 7 summarises the practical work developed by participants, which can all be found at Annex 1, as well as their assessment of the training. Finally, Chapter 8 highlights some lessons learned and its future implications for further trainings and to facilitate the use of Foresight in NMS and CC.

Chapter 1: the evolution of Foresight practice

Based on the presentation given by Dr. Ozcan Saritas

This chapter describes the likely evolution of Foresight activities and its main characteristics and practice over time. It is divided into activities prior to the 1960s, and those during the decades of 1960, 1970, 1980, 1990 and 2000.

From the 16th to 18th Centuries, Foresight was used mainly to improve decision making and public debate and to attempt to identify long term trends and long-term implications of short term decisions. Activities usually were characterised by having a wide scope and wide array of issues being addressed due to an increasing complexity of societies.

During the 19th Century, Foresight activities focused mainly on the future of capitalist economies by classical political economists. This century can be primarily characterised by the industrial revolution, in which social studies were usually fragmented, more focused on a few specific but apparently unrelated issues and with a short term orientation.

In the early 1900s the first Foresight activities are recognised. By the 1930s, principles of trend extrapolation and social indicators were established. Developments in social and technological forecasting and subsequently in Foresight started around the World War Two. By the 1960s, methods of expert analysis including Delphi and cross-impact analysis were established. The first computer simulation studies were becoming well-known. Foresight activities have been conducted since the 1950s. Some examples are:

- In the US, think tanks especially in the defence field such as RAND, Hudson Institute, Institute for the Futures and the Futures Group.
- In the UK, the Programmes Analysis Group.
- In the EU, the FAST programme.

During the 1960s Foresight was narrowed to anticipate new technology areas. The efforts were called forecasting and the activities were mostly concerned with the probabilistic assessment of what is likely to happen in the future. Applications were focused on the military and large corporations due to their interests in strategic analysis across technological problems. The main focus area was the disciplinary taxonomies of science and engineering. Practice shows that exercises were usually carried out with participation of a limited group of experts and professional futurologists. Creative and consultative methods were used such as Delphi, scenarios, brainstorming and expert panels.

In the decade of the 1970s there was a change in the understanding of forecasting due to the 1972 oil-shock and the report "Limits to Growth" (Meadows et al., 1972). Simple trend analysis was not enough to understand the complexity of the world. Forecasting thus tended to be less deterministic. Hence, the future is considered as not an extension of the past, and the possibility of discontinuities must be allowed for.

In the 1980s Foresight is used to distinguish between single and multiple futures. Therefore, Foresight starts to be used to express a wider frame, to consider alternative futures and to create actions to achieve the desired goal. In this context the French approach La prospective was launched focusing on the multiplicity of the future. Moreover, there was a shift from predictive forecasting towards a process-oriented and participative institutional Foresight. The main characteristics of this decade can be summarised as:

- Emphasis on the 'process' aspect rather than focusing merely on the use of techniques and by giving the notion of 'alternative futures'.
- Active participation to collectively anticipate the important influences that may shape the future of society.
- Institutional Foresight: "an aggregate of individual perceptions negotiated into some agreed form that becomes a property of the institution" (Loveridge & Saritas, 2005).
- The ideas that emerged in the 1980s found their reflections in government policy-making increasingly in the 1990s.
- With regards to Foresight practice, starting from the 1980s, institutional Foresight activities were widely acclaimed as an activity associated with the identification of priorities and the development of long-term government policies.

In the 1990s Foresight is practised extensively as an institutional activity associated with S&T policy making by government, industry and other organisations. Longer-term research planning was necessary for governments in an era of increasing global economic competition (Martin and Irvine, 1989). Thus, Foresight activities were mainly driven by the S&T agenda. Foresight was therefore seen as an action for the provision of further economic and social benefits:

- "Foresight is the process involved in systematically attempting to look into the longer term future of science, technology, the economy, and society with the aim of identifying areas of strategic research and the emerging new technologies likely to yield the greatest economic and social benefits" (Martin, 1995).
- Foresight is "a systematic means of assessing those scientific and technological development which could have a strong impact on industrial competitiveness, wealth creation and quality of life" (Georghiou, 1996, p.359).

The key elements of Foresight during the 1990s were understood as: (i) the process should be systematic; (ii) S&T should be a central focus; (iii) there should be a longer timeframe than in existing S&T planning; and (iv) S&T developments should be understood in terms of their inter-relationships with economic and social developments. Nevertheless, practice shows that:

- The main activity area was S&T, along with markets. The importance of broader social, economic and cultural factors was rarely recognised.
- The main focus was on industry and service sectors with the considerations given on technology-push and market-pull.
- Participation was limited to experts from academia, industry and government representatives (usually drawn by the scientific bodies of government from the nominated sectors, academia and public institutions).
- A combination of creative and consultative methods was used (e.g. different combinations of Delphi, panels, brainstorming and scenarios were the most common).
- The formal products of such exercises were largely a matter of research priorities and strategic goals concerning the different aspects of S&T.

However, towards the end of the 1990s there was a change in the S&T dominated appearance with a recognition of the importance of broader social, economic and cultural factors as providing the context for the development and use of S&T.

In the 2000s Foresight is redefined as "the application of 'systematic', 'participatory', 'future-intelligence-gathering and medium-to-long-term vision building process' to 'informing present-day decisions and mobilising joint actions' (Miles and Keenan, 2002)". Some of the reasons that social aspects gained more interest included:

- The increasing importance of innovation (both technological and organisational) as an element in national and corporate competitiveness, and in strategies to increase the efficiency and effectiveness of organisations of all types.
- The development of service economies. Considerable portions of economic activity, employment and output have started taking place in service sectors of the economy.
- Other developments including globalisation, changes in demographic structures and in cultural practices, and environmental affairs.
- Recognition of the close relationship between S&T and society.

In the present decade, Foresight practice shows that its main elements and characteristics are:

- Coverage and integration of the technology, market and social dimensions in the search for new ideas to create sustainable development.
- A focus covering thematic issues such as demography, land-use, transport, environmental problems and attitudes, and living standards.
- The actors from academia, industry and government are joined by social stakeholders such as voluntary organisations.
- A mixture of creative and consultative methods continues to be used including various combinations of scenarios, brainstorming, panels and the Delphi method.
- Foresight is distributed and embedded at multiple levels. This reflects the increasingly distributed nature of the innovation system. In a distributed system, knowledge acquisition is much more about the ability (e.g. of a firm) to scan and draw upon outside sources of technology and to manage partnerships.
- The efforts are not centrally managed or controlled. This type of activity does not refer to any single exercise (where the whole landscape was covered in one single exercise) but rather to a landscape marked by a rich variety of distributed exercises focused upon the visionary needs of particular organisations, communities, spaces.
- S&T is still a major area of activity of most programmes.

In relation to corporate Foresight practice, these can be traced back to the 1960s and firms' interests in addressing the future increased with the failure to predict the oil crisis in 1972 and the report 'Limits to Growth' (Meadows, 1972). However, such exercises are nearly always proprietary, meaning that outcomes and impacts often are not diffused as it usually means a source of competitive advantage. The basic concerns of national and regional governments are shared when the exploitation of new technologies are considered. The process can be generally summarised as outlined in Figure 1.



Figure 1: corporate Foresight process
Source: Saritas (2006)

In summary, the evolution of Foresight practice and characteristics are described in Table 1. It is important to highlight that the new practices are not necessarily displacing the earlier ones but instead constitute new layers of activity on top of existing ones.

Organisation	Centrally managed one single exercise	Centrally managed one single exercise	Centrally managed one single exercise	Distributed Foresight exercises on the landscape
Breadth	Holistic (entire spectrum of fields) or macro-level (a number of fields)	Holistic (entire spectrum of fields) or macro-level (a number of fields)	Holistic (entire spectrum of fields) or macro-level (a number of fields)	Usually <u>meso</u> -level (single scientific field) or micro (project) level
Level	National level exercises	National level exercises	National and/or regional level exercises	Multi-level exercises (e.g. at research institute and/or corporate levels)
Coverage	Mainly technology forecasts	Combines technology and market perspectives	Integrates technology, markets and the social perspectives	Covers all kinds of systems (e.g. science, technology, markets, society or ecology)
Focus	Disciplinary taxonomies of science and engineering	Industrial and service sectors	Thematic focus, reflecting socio-economic problems	Multiple focuses
Methods	Creative and consultative methods, i.e. Delphi, scenario, brainstorming, panels	Combination of creative, consultative methods, i.e. Delphi, scenario, brainstorming, panels	Combination of creative, consultative methods, i.e. Delphi, scenario, brainstorming, panels	Combination of creative, consultative methods, e.g. Delphi, scenario, brainstorming, panels
Actors	Technological experts and even professional futurologists	Actors from academia, industry and scientific bodies of government	Social stakeholders are also involved, other government institutions on health, safety and the environment	Science base, government departments, and research councils – can be anyone

Table 1: evolution of Foresight practice and characteristics
Source: Saritas (2006)

Chapter 2: possible rationales for Foresight

Based on the presentation given by Dr. Michael Keenan

The first aspect to be taken into account, especially for newcomers to the discipline, is the understanding of what Foresight is.

- Foresight refers to a set of systematic and purposeful processes of future-oriented deliberation between (innovation system) actors with a view to identifying actions to be taken today for a better future tomorrow.
- Such processes are typically launched in the context of a programme or exercise, and usually lead to the identification of promising areas of strategic research (often interdisciplinary) for funding bodies to support.
- Foresight exercises provide a space for deliberation and strategic conversations between (innovation system) actors. They also seek to create a pool of knowledge and analyses to inform debates and to provide a resource for others to use.

Another important aspect to be taken into consideration is that there is no “one size fits all” and that Foresight exercises can have many shapes and sizes. With regards to the common aspects, usually these projects need to rely on a series of basic elements, such as experts, panels, project team, sponsors, reporting and recommendations. On the other hand, typical variations could be: methodological sophistication, degree of participation, budget and time available, time horizon, coverage, organisational configuration, etc. Nevertheless, there are five essential elements that must be carefully considered in any Foresight exercise:

- Anticipation and projections of long-term developments.
- Interactive and participative methods of debate and analysis.
- Forging new social networks.
- Elaboration of strategic visions based on a shared sense of commitment.
- Implications for present-day decisions and actions.

Foresight can use forecasts, as well as contribute to planning, but it should not be confused with either activity. Forecasting tends to assume that there is one probable future, whereas Foresight assumes that there are numerous possible futures, and that the future is in fact there to be created through the actions we choose to take today. As for planning, Foresight time horizons should be beyond the usual planning period. Time horizons will vary depending upon the issue or sector under consideration and the needs of the target audience. Time horizons typically vary between 5-30 years, but they may be even longer in some instances.

As to the orientation of Foresight there is a need to always balance and find an optimal mix between the codified outputs (products, such as reports with policy recommendations) and the tacit outputs (processes, such as the forging of new networks). Generally speaking, the most common outcomes of Foresight exercises are (but not restricted to):

- Set general research directions.
- Inform funding and investment priorities.
- Increase understanding and change mindsets.
- Build trust between participants.
- Aid collaboration across administrative and epistemic boundaries.
- Highlight interdisciplinary opportunities.
- Build networks and strengthen communities.
- Provide anticipatory intelligence to system actors.
- Build visions of the future.

- Inform policy and public debates.
- Increase involvement of system actors in decision making.
- Improve policy implementation by enabling buy-in to decision-making processes.

A critical need is to be clear on why one is embarking upon Foresight, what the problems and challenges being tackled are, and if Foresight can help to address these. This clarity should extend to the formulation of clear (and hopefully) widely shared objectives. In this regard, rationales tend to underpin three general sets of objectives: (i) creation of visions and/or priority-setting; (ii) better wired innovation systems; and (iii) development of a 'Foresight culture'. However there may also be some more locally-specific objectives.

Overall, it is important to remember that Foresight is no panacea and that one needs to be realistic as to what it can and cannot achieve.

A Foresight exercise has multidimensional elements that need to be jointly considered when defining its boundaries. With regards to its territorial level it can be national (most visible), sub-national (regional, city-region / municipality), supranational (bilateral, multilateral, international organisation), and global. As to its domain, examples can be economic, social, environmental, technological, or any scientific discipline. The starting point can vary between flows (e.g. rivers, pollutants, people, traffic, goods and services, etc.); networks (e.g. people, organisations, infrastructures, etc.); and/or markets (e.g. goods, services, labour). Other elements⁵ to be considered are: sponsors (funding bodies), participants (who need to be constantly engaged/motivated in participating as well as to build mutual and collective learning).

A final variable that needs to be clarified at this stage is related to what to expect from a Foresight exercise. Usually these can be divided into three stages as shown in Table 2.

Stage	Possible Impacts
During the exercise	<ul style="list-style-type: none"> • Production of baseline and benchmarking reports. • Building of new linkages. • Changing perceptions / new understanding / enlightenment. • Articulation of widely-shared visions.
Immediately after	<ul style="list-style-type: none"> • New (interdisciplinary) R&D programmes and projects. • Further use and development of Foresight results.
Sometime later	<ul style="list-style-type: none"> • R&D and innovation impacts. • New working communities.

Table 2: possible impacts of Foresight
Source: Keenan (2006)

Examples of reported impacts gathered from the EFMN network⁶ are:

- Better informed strategies in general.
- Making the case for increased investments in R&D.
- Using Foresight results to evaluate and future-proof strategies.
- More informed STI priorities.
- Development of new ways of thinking.
- Creating a language and practice for thinking about the future.
- Highlighting the need for a systemic approach to both policymaking and innovation.

⁵ For a more comprehensive list of these elements and their characteristics please see the Online Foresight Guide at http://forlearn.jrc.es/guide/0_home/index.htm

⁶ For more information see <http://www.efmn.info>

- Development of reference material for policymakers and other innovation actors.
- Better evidence-based policy.
- A source of inspiration for non-governmental actors.
- Creation of new networks and clusters.
- Establishment of communication structures between innovation actors.
- Collective learning through an open exchange of experiences.
- Enhanced reputational position and positive image of those regions running a foresight.
- Better visibilities of a region's strengths and competencies.
- Interest from the general public.
- Achievement of long-term reform of the productive system through a raised emphasis on high technology.
- Accumulation of experience in using foresight tools and thinking actively about the future.
- Stimulation of others to conduct their own foresight exercises after being inspired.

Chapter 3: designing and organising a Foresight exercise

Based on the presentation given by Dr. Ozcan Saritas

The content of this chapter, as in the following two chapters, is extensively described in the FOR-LEARN Online Foresight Guide (http://forlearn.jrc.es/guide/0_home/index.htm). Therefore, the following three chapters will rather focus on the complementary material that stemmed from the training activity and that, together with the mentioned Online Guide, can provide additional useful inputs for those engaging or aiming to start a Foresight exercise. The present chapter will describe the basic steps that one needs to take into consideration when designing and organising a Foresight project with useful and practical tips whenever relevant.

Initially, it is critical to understand the context and recognise the system that the exercise is focusing upon. If possible a diagram which represents the various actors and variables of the system, their interrelationships, and the relationships of such a system with other systems may provide useful information and will ensure that the exercise will remain focused on the objectives and impacts it is aiming at from the outset. This focus will also allow the flexibility needed along the process, especially when selecting those methods that should be applied at each stage of the project. The main design steps can be outlined as follows.

Building support

- What sorts of support are needed for a foresight exercise?
 - Political support.
 - Moral support.
- From where can such support be obtained?
 - Politicians.
 - Society.
 - All other stakeholders (e.g. industry, academia and NGOs).
- Promotion is a key element to build support

Defining the coverage (focus and scope)

- Domain (e.g., technology, society, environment, etc).
- Geographical (e.g., global, international, national, regional, local, etc).
- Given the focus and objectives of the exercise, what should it seek to cover?
- The appropriate time to determine the areas to cover.
- Who selects and determines the areas to be covered and how is this done?
- Specific areas for investigation and intervention could be, for example:
 - Sectors: IT, transport, construction, tourism, etc.
 - Themes: health and social life, education, governance, etc.
 - Issues: global warming, ageing population, competitiveness of the R&D system, etc.
 - Systems: national innovation systems among others.

Setting the time horizon

To set a future point in time that limits the temporal scope and future orientation of Foresight activities. The determinants of time horizon usually are:

- Beyond the normal planning horizons (usually >5 years; typically between 5 – 30 years).
- The objectives of the exercise.
- The nature of the subject sector/issue/theme.

Determining the sponsors and clients

The sponsors are those funding the exercise or parts of the project and the clients are those who may use or benefit from the attained partial and final results and outcomes.

Assessing previous and existing work

- Previous policy and planning work.
- Previous Foresight.
- Databases (both academic and non-academic, e.g. e-mail groups can provide indirect involvement).
- Theoretical work.
- A possible method: keyword / content analysis (e.g., text analysis software).

Mapping available resources (time, money, and skills)

Time is a critical parameter for Foresight exercises. Usually national exercises take 1-2 years and regional ones tend to be shorter. There is also a number of skills which are required throughout the process, varying from project management, facilitation (e.g. panel facilitators and secretaries), expertise (e.g. methods being applied and/or issues being investigated), and the use of IT, among others. Moreover, finding a sponsor is fundamental. Potential sponsors can be public (government, regional authorities, etc.) and/or private (enterprises, associations, non-profit organisations, etc.). The total cost of the programme may vary. Some of the factors affecting the cost of the programme are:

- Duration of the exercise.
- Number of people involved.
- Number of events (e.g. meetings, workshops, conferences).
- Location.
- Methods used.

Building a team

The necessary sorts of people should be nominated and organisational structures should be established. There are a number of actions that are the responsibility of the project team:

- Nomination of group members.
- Managing the process.
- Identifying existing literature.
- Preparing reports on specific issues.
- Organising the project activities (e.g. meetings, workshops, conferences)
- Applying of the methodology and methods selected.
- Keeping regular contacts with the stakeholders and the sponsors to ensure that the agreed focus and direction are maintained.
- Monitoring the exercise.
- Maintaining records of costs, resources and time scales for the project.
- Preparing syntheses.
- Preparing final report.
- Organising public debate on specific issues.

Designing the methodology

'Methodology' is not equal to 'method'. Methodology is prior to method and more fundamental, it provides the philosophical groundwork for methods (e.g. positivism, constructivism, empiricism). Methods are then applied to facilitate discussions, to give directions and to obtain results. Table 2 shows some examples of methods and their main characteristics⁷.

⁷ For a more comprehensive list of these elements and their characteristics please see the Online Foresight Guide at http://forlearn.jrc.es/guide/0_home/index.htm

Criteria	Methods
1. Quantitative (assumption-based) methods using statistics and other data	- Trend extrapolation - Simulation modelling and systems dynamics
2. Participative methods to obtain knowledgeable opinion	- Expert panels - Brainstorming - Mind mapping - Scenario analysis workshops - Delphi method - Cross impact analysis
3. Methods for identifying key points of action	- SWOT analysis - Critical / key technologies - Relevance trees - Morphological analysis

Table 2: some methods applied to Foresight
Source: Saritas (2006)

Actors and organisation of Foresight

The level of involvement of the various actors may vary depending on the type of Foresight and its focus. Table 3 depicts the main actors which usually are involved in the Foresight process.

	Autonomous projects	Embedded activities
Key actors	Promoters Stakeholders Steering committee Project team	Promoters Stakeholders
Usually involved actors	Champions Experts	Foresight activities coordinator Experts
Actors involved in large scale projects only	Citizens Politicians Monitoring group Foresight experts	Not relevant

Table 3: main actors involved in Foresight activities
Source: Saritas (2006)

Communication strategy

It is critical to provide a good reflection of the main thrust of the Foresight exercise.

(Identifying) participants

A model for the identification of participants and stakeholders is shown in Figure 2. Usually a critical view might be beneficial where conflicts and unequal power distribution occur, and where a balanced representation is needed. Participation is highly important in terms of:

- Gathering of relevant information and knowledge.
- Simulation of new insights and creative views and strategies for the future, as well as new networks.
- Diffusion of the Foresight process and results to much wider constituencies.
- The overall impact of Foresight in terms of follow-up action.

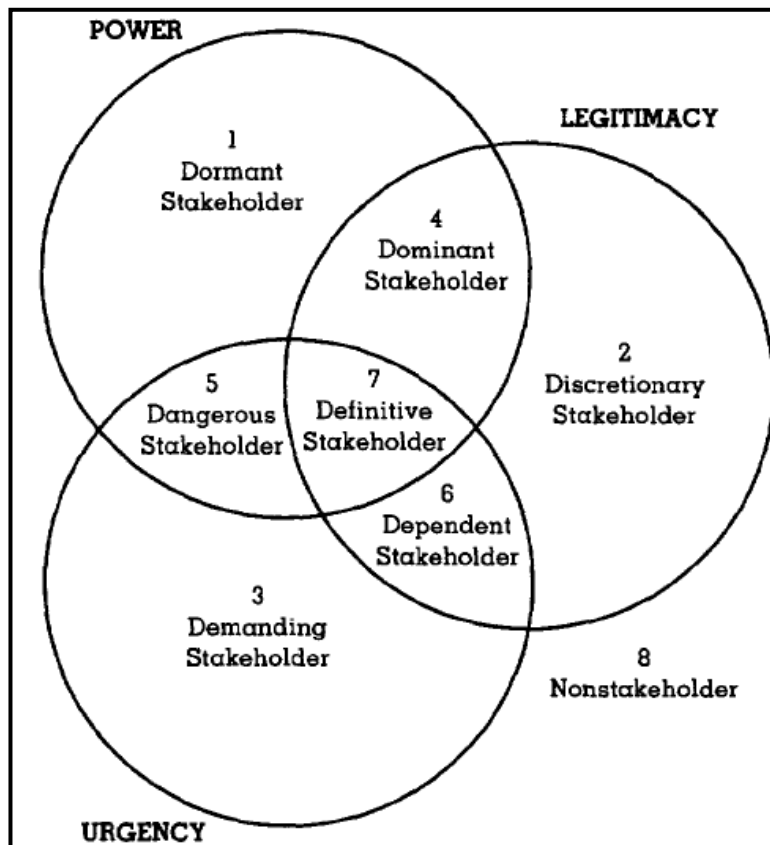


Figure 2: model for the identification of participants and stakeholders
Source: Mitchell et al. (1997)

A final remark with regards to the design and organisation of a Foresight exercise relies in the fact that, as a complex system, it is soft in characteristics due to its dependency to organisational and individual behaviours. Hence, changes and deviations from the initial project plan are likely during the process. For this reason, it is important to be ready to make decisions on the design and organisation throughout the exercise. Foresight should encourage participants to create ideas, rather than making them prisoners by imposing the rules of pre-determined methods.

Chapter 4: running and managing a Foresight exercise

Based on the presentation given by Dr. Michael Keenan

As mentioned in the previous chapter, this section will focus mainly on some practical hints and tips that add to the extent material available in this subject at the FOR-LEARN Online Foresight Guide (http://forlearn.jrc.es/guide/0_home/index.htm). The main idea is to highlight some of those things that can and should be thought about beforehand.

The major challenges for the Foresight manager and/or practitioner usually are:

- Keeping within time and budget. Both project management and political skills are critical.
- Avoiding 'BOGSAT' (bunch of guys sat around the table) by genuinely opening up the process, especially to different perspectives.
- Dealing with short-termism, i.e. a failure to look sufficiently forwards (or backwards).
- Evidence-based: collecting, circulating and digesting information.
- Getting people to act as individuals rather than as representatives (e.g. of their organisations).
- Instilling creative thinking.
- Unfamiliarity with some foresight methods.
- Ensuring sustained participation.
- Managing expectations of (policy) impacts.
- Remaining relevant whilst pushing the boundaries.

Time and budgets largely dictate the approach to foresight. Consequently it is important to be clear on the time available for the exercise and plan your approach accordingly. Practical tips are:

- Are there real deadlines that must be respected?
- The scope and rationales for setting some artificial deadlines?
- Wise to plan for a 50% overrun on time, especially first time around
- Generally speaking, budgets must be in place before starting:
 - Budget planning – how much is each part going to cost?
 - Does budget need to be spent by a particular time?
 - Possibility of obtaining further funding as the exercise progresses?
 - Resources in kind – where they come from and their value?

Opening up the process is often easier said than done. Even with good intentions, this requires some skill. Some interests will prefer to maintain exclusivity to the usual suspects – for example, scientists will often take this position, as will business and government interests. Hence, how to convince them of the importance of opening up the process? What value can be demonstrated? There are also time and budget implications that need to be taken into account. At the end, decisions on gate-keeping and leaving some groups or individuals locked out will possibly need to be done.

When identifying and deciding on those who should participate in the exercise, two questions are relevant to help in selecting the participants' profile composition: (i) what sorts of expertise and/or experience does the exercise require? and (ii) how should this be represented in the exercise? Moreover, it is critical to find a balance:

- Within exercise and/or within individuals.
- Perspectives.
- Biases and interests.
- Transparency.

- Methodological support.
- Wide consultation.

In relation to setting the time horizon of a Foresight exercise, it is always important to remember that time horizons should be beyond normal planning periods. Again it is imperative to highlight that Foresight is concerned with policy actions today, but that this shouldn't constrain the process to current and near-future issues. The main advantages of looking to the future could thus be summarised in: (i) novelty and distinctiveness that interest people, (ii) capture future trends and issues that are often missed, and (iii) avoid being (overly) caught up in contemporary controversies. However, how to instil Foresight (forward looking view) into Foresight (activities and processes)?

- Looking forward, e.g. through forecasting, trend analysis, gaming and scenarios, futurist writing, etc.
- Looking across, e.g. through systemic thinking
- Looking backwards, through historical analogy, previous future-oriented studies, trend analysis, etc.

This set of actions described above is critical to any Foresight exercise as it is the need to deal with bias and prejudice, or the tendency people have to think they already know about past, present, and near-future picture. These assumptions need to be always tested/ questioned. This may best be done implicitly by presenting statistical data, benchmarking studies, multiple-perspective analyses, etc. Nevertheless, where do these inputs come from? How to ensure participants use the evidence base provided? The aim must be to enable the transformation of information into knowledge. For this, it is necessary to allow sufficient time; package the data into attractive and accessible formats; design the process so that such data is required by default. It is important to demonstrate the use of these inputs to build an evidence base into the whole process. Some typical data inputs are:

- Baseline data: (i) socio-economic data and statistics; (ii) existing relevant strategic studies; and (iii) S&T metrics, e.g. bibliometrics, patent analyses, etc.
- Benchmarking data: national, regional, sectoral, company, organisational comparison.
- Mapping data: (i) stakeholder analysis; and (ii) issue analysis.
- Future-oriented data: (i) existing or new futures studies and scenarios; and (ii) existing or new forecasts and trend analyses.

Managing information across the various parts of an exercise can sometimes be difficult, especially in large exercises with parallel activities. Here, a major challenge concerns managing information through the process, i.e. from one stage of the exercise to the next. A very important issue is to always have clear whether it is critical to the project to keep the sponsor (and wider community) informed and content. Possible solutions to managing information across all steps of a Foresight exercise could be:

- Regular reporting and distillation of information.
- Using some individuals in dual or multiple roles.
- Designing exercises with dependencies across space and time. But here it is crucial to understand all risks involved, since failure at any stage may hinder the whole process.
- Knowledge management skills are required throughout the exercise.

Another important feature of a Foresight exercise relies in the need to encourage 'out-of-the-box' thinking. However, getting people to think creatively and (to some extent) independently of their affiliations can be difficult. Taking a long-term view should help in this regard, as should the inclusion of multiple perspectives. It is also relevant to use methods that stimulate creative thinking, such as scenarios, gaming, and brainstorming, among others. Inviting leading thinkers

to input into the process may be appropriate (and increase the richness of the process) if it is ensured that these do not overshadow other participants or that the views of such leaders do not dominate (or monopolise) the process.

When running the exercise it is important to have in mind that most participants will be unfamiliar with Foresight approaches and methods. This instils excitement in some, but also suspicion in others. At the start, some of the methods might appear to be more sorcery than serious approaches to thinking about future policy and strategy. Therefore, methods should be explained: the general approach, its strengths and limitations, where it might be used, examples of use in other settings, and an outline of any typical variations. Where possible, training in the use of methods should be provided, at least to those participants who are expected to play leading roles – but mastery will only come through use.

Ways for ensuring participants remain committed to the exercise also need to be thought about. Panels are often used in foresight studies for this purpose. As Foresight is a participative, discursive activity, panels are ideal for opening up the Foresight process to hundreds of people and allow for meaningful debate and knowledge exchange. Panels also allow availability of expertise ‘on tap’ within the exercise; it can easily complement (and even necessary to) other Foresight methods; it can ensure authority, credibility, legitimacy to the process; and can act as incubators for foresight ‘champions’. Panels often constitute the ‘process centres’ for foresight, but one has to be aware of the dangers of over-dependency on panels.

In order to attract and keep participants involved throughout one should at least highlight the importance of the exercise and the benefits of participation; but care should be taken not to oversell it. For panels, it is important to provide a Terms of Reference (TOR) that should be distributed to panels at the outset. Such document provides background on and rationales for exercise. It also allows for accountability and transparency. Moreover, it sets out:

- What needs to be achieved.
- How the panel should conduct its work.
- Series of milestones for deliverables.
- How the panel works fits into the overall foresight study.
- Details of resources available to panel.

Foresight should not provide “more of the same”, it should challenge current thinking. At the same time, Foresight should be action-oriented, so it needs to be relevant. But relevant to whom? Building an exercise around some preconceived notions of relevance can lead to overly conservative outputs. On the other hand, complete freedom can lead exercises to go off course. Therefore a balance is needed and exercises will need periods of creativity and reflection. Foresight should be analytical but essentially bring in new frames of reference that challenge the boundaries of current thinking and policy.

Reaching the ‘closure’ of an exercise it is time to report on priorities and recommendations (product) and make sure that the process outcomes are not lost with time. Possibly the findings would need an audit trail to ensure the coherence and integrity of outcomes. It is also important to establish quantitative and qualitative indicators that will enable to measure the success and quality of the whole process. Finally, it is time to define a dissemination strategy and identify who does what.

However Foresight should have impacts, it is critical to be clear of what can be expected and by when. There is a need to take a broad view of what (tangibles and intangibles and their interdependency) constitutes an impact and where (systemic view) it might be found. This requires an understanding of policy, business, innovation, and other processes. It also needs an

appreciation of the scope of intervention that is possible with Foresight, having clear that impacts occur over time. The final challenge in the process is in relation to measuring (demonstrating) impacts and for this reason management need to encourage realistic expectations of what can be achieved without instilling disenchantment.

Chapter 5: general methods used in Foresight

Based on presentations given by Dr. Fabiana Scapolo, Dr. Michael Keenan, Dr. Ozcan Saritas and Professor Ron Johnston

This chapter, as the two previous ones, is considerably developed at the FOR-LEARN Online Foresight Guide (http://forlearn.jrc.es/guide/0_home/index.htm). However, unlike the two previous chapters, both the general description of Foresight methods as well as the in-depth discussion of the three selected methods for this training – Delphi, Scenarios and Roadmapping – were all based on the material available on the Online Foresight Guide. For this reason this chapter will not describe the material delivered in the training⁸. Therefore, again the focus of this section will be on relevant general tips that complement the material available.

Formal methods are usually used to:

- Aid visualisation of possible futures.
- Attain transparent outcomes (if used properly) through a systematic process.
- Help identify knowledge gaps.
- Can constitute mixed forums for interaction and communication between various actors.
- Legitimise the Foresight exercise.

Each method is best suited to certain specific objectives, context, resources, culture and the mindset of the team and participants, and can prove inadequate if some conditions are not met. Some criteria that need to be considered when selecting the methods to be employed are:

- Organisational context.
- Nature of issue(s) under consideration.
- Quantitative/qualitative data requirements.
- Time horizon.
- Methodological competence.
- Process/product balance.
- Suitability for combining with other methods.
- Suitability for visualising the results.

A Foresight process relies on the combination of different tools. It is important to highlight that it is becoming increasingly common good practice in Foresight not to rely on a single tool, but rather to employ an appropriate mix of methods to address an issue and achieve the desired outcomes. Whereas a lot of material exists on the use of each specific method, relatively little has been written on the possible combinations between them. For instance, a Delphi survey can be used to extract the driving factors to be used as the main dimensions of a scenario building. The use of the appropriate mix of methods is therefore crucial to achieve the desired outcomes. Foresight methods can address and involve the following functions⁹:

- Diagnosis: scoping of issues at stake and data gathering (environmental scanning; trend extrapolation; structural analysis; morphological analysis and relevance trees).
- Prognosis: help thinking about possible futures and their implications (scenario building).
- Prescription: define recommendations about what can be done (scenario building; roadmapping; backcasting; cross-impact analysis).

With regards to the different typology¹⁰ of methods, these can be summarised as follows:

⁸ Please check the Online Foresight Guide for information on Foresight methods: http://forlearn.jrc.es/guide/0_home/index.htm

⁹ These are fully described at the Online Foresight Guide: http://forlearn.jrc.es/guide/0_home/index.htm

¹⁰ These are fully described at the Online Foresight Guide: http://forlearn.jrc.es/guide/0_home/index.htm

- Explorative and normative methods (outward bound; inward bound).
- Quantitative methods (reliance on numerical representations of developments).
- Qualitative methods (used when there is lack of data).
- Expert-based methods (used to draw out informed opinion and elicitation of knowledge).
- Assumption-based methods (elaboration of visions and priorities).

An example of the different classes of methods¹¹ can be seen on Table 3.

Criteria	Methods
Methods based on eliciting expert knowledge to develop long term strategies	<ul style="list-style-type: none"> – Delphi method – Experts panels – Brainstorming – Mindmapping – Scenario analysis workshops – SWOT analysis
Quantitative methods that make use of statistics and other data	<ul style="list-style-type: none"> – Trend extrapolation – Simulation modelling – Cross impact analysis – System dynamics
Methods to identify key points of action to determine planning strategies	<ul style="list-style-type: none"> – Critical/ key technologies – Relevance trees – Morphological analysis

Table 4: classes of methods used in Foresight
Source: Scapolo (2006)

It is important to remember, however, that there is no one-way of classifying methods. Important concepts that can be used to characterise methods include, among others:

- The level of participation (large involvement of citizen versus reduced number of experts).
- The degree of reliance on expertise.
- The degree of interactivity.

These characteristics can be combined within a method in various ways so, for example, a scenario method can heavily rely on expertise and use this in a creative and interactive way. On the other hand, a Delphi survey could involve thousands of people without being interactive.

Finally, it is relevant to have an understanding of the French approach or the toolbox of ‘La Prospective’ to know whether such a package can be of benefit to a particular context. ‘La Prospective’ is a way of thinking that does not see the future as a continuation of the past and which must be global. It is a way to clarify present actions in the light of the future. The method is divided into five objectives. These objectives are relevance, coherence, plausibility, importance and transparency. Overall, the method can be summarised as Figure 3 shows.

¹¹ For a more comprehensive list of the different methods used within Foresight and their characteristics please see the Online Foresight Guide at http://forlearn.jrc.es/guide/0_home/index.htm

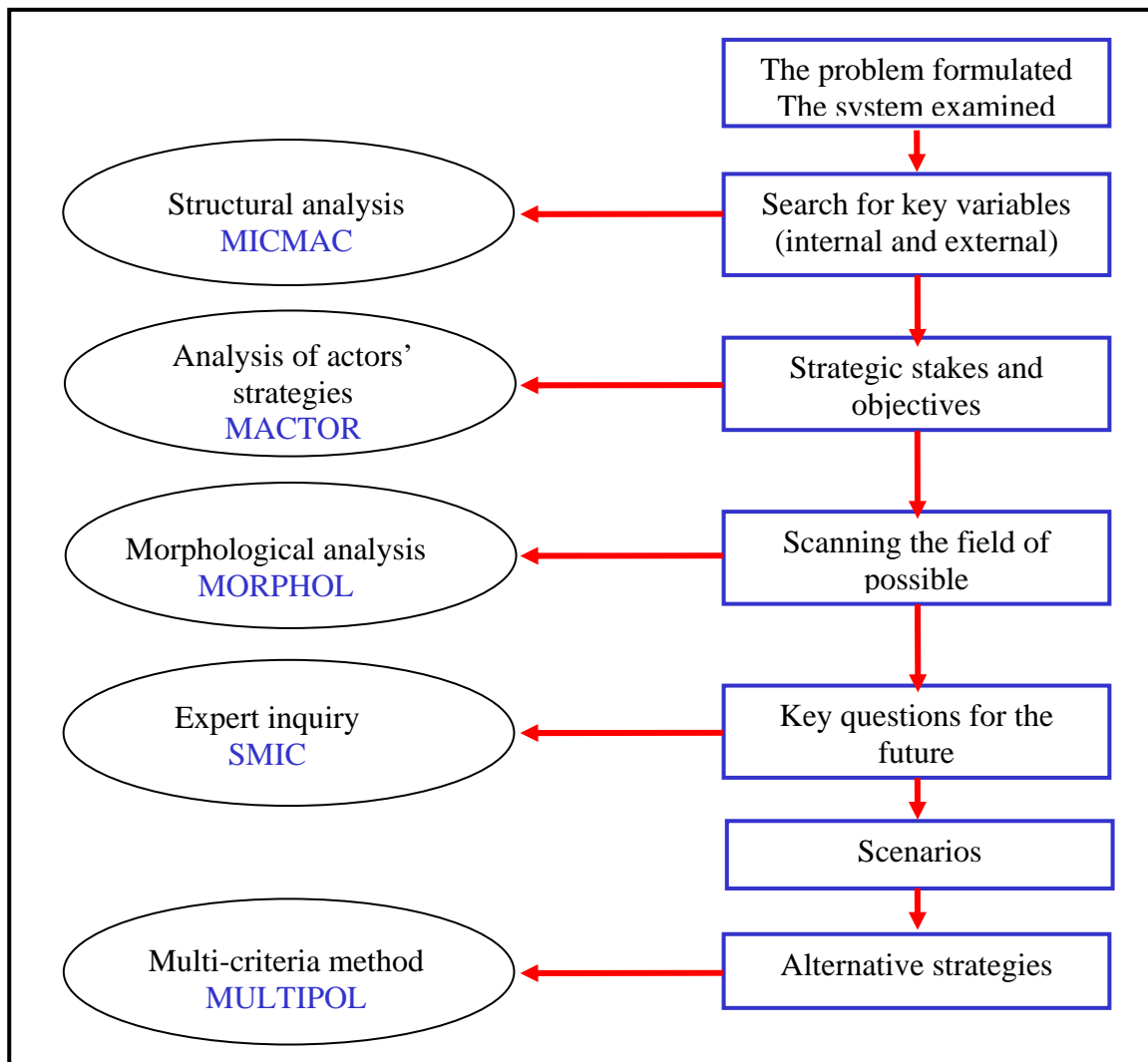


Figure 3: the method 'La Prospective'
Source: Scapolo (2006)

With regards to the discussions on the three selected methods, rather than describing here each method¹², the focus of this report will be on the practical sessions that took place.

For the Delphi method participants were introduced to the basics when designing a Delphi survey and the three main steps needed to apply the method: derivation of statements, identification of variables and construction of the questionnaire. After the demonstration of an online Delphi tool¹³ participants had to develop, in pairs, some statements in a given subject, which in this case was on transport, and construct a questionnaire using the online tool provided.

The definition of statements was the most sensitive activity, as it is in real practice, and participants asked questions ranging from the optimum number of words for each statement, which usually varies from 16 to 30 words, up to the most appropriate number of statements for a given subject if we are looking at a national Foresight exercise, which would be less than 50 statements ideally¹⁴. Finally, participants were also interested in understanding the usual set of

¹² These are fully described at the Online Foresight Guide: http://forlearn.jrc.es/guide/0_home/index.htm

¹³ Tubitak Delphi Software.

¹⁴ In fact this depends entirely on the breadth of the issue. For example it is interesting to check how many statements in the latest Japanese Delphi.

variables which are tested against each statement. Although these variables vary according to the subject and focus of study, some examples were given, such as:

- The period of occurrence.
- The degree of expertise.
- Contribution to e.g. Competitiveness, Wealth Creation, Quality of Life, Sustainable Development.
- The necessity of collaboration.
- Country's current position versus other countries.
- Constraints on occurrence.

The practical session on scenario development built on the issues considered in the Delphi exercise on the subject of transport. A focus of 'Transport in Europe in 2020' was selected, and a range of drivers that were likely to shape that future identified e.g. economic growth, climate change, other environmental pressures, availability and cost of energy.

The next stage involved the identification of major uncertainties that could impact on the future of transport. Those identified included break-up of the EU, war, technological advances in power supply, and widespread epidemics. These uncertainties were weighted on the base of their potential impact and degree of uncertainty, and the results used to establish the 'scenario logics' i.e. the features defining each of the two scenarios to be developed. Participants were assigned to two groups, and worked together to develop plausible scenarios of the future of transport in Europe to 2020 under their determining conditions.

The process was quite effective, and lead to the construction of two preliminary, but insightful, scenarios in the limited time available.

The third practical exercise involved the development of roadmaps. After the process and requirements of roadmapping had been explained, the two groups were asked to identify a specific objective (a preferred future) to 2020 from their scenario exercise. They then worked within their groups to identify one or more 'routes' to the achievement of that objective.

The following of a single, selected issue through the three methods allowed considerable synergy and exposure to issues involved in the use of these Foresight tools. It also prompted a great deal of discussion about the strengths and limitations of the tools, and practical problems associated with their effective application.

Chapter 6: getting prepared for the practical work – designing, organising and practising Foresight in context (applying systems thinking to Foresight)

Based on the presentation given by Dr. Ozcan Saritas

It is important to recognise that institutional Foresight is embedded in a context, which affects the content and process of the activity. The context means the set of facts or circumstances that surround a situation or event. The content is the sum or range of what has been perceived, discovered, or learned. The process is a particular course of action intended to achieve a result.

The main goal of a Foresight exercise is to introduce change or improvements in to the content of the exercise and thus provide further changes or improvements in the context. Hence, the content of Foresight refers to “what” to change (e.g., the subject area(s) taken into consideration or the ideas created related to those areas).

The process of Foresight can be defined as *“the actions, reactions, and interactions from the various interested parties as they seek to move the [organisation] from its present position to its future state”* (Pettigrew, 1987).

Foresight is designed, organised and deployed within its internal context that is composed of particular structures (e.g. internal processes, procedures, equipments, technologies) and behaviours (e.g. culture, politics, social interaction, skills, motivation, power, management styles). Foresight is also embedded in an external context and its surrounding systems, which it is expected to improve. Figure 4 depicts the Foresight system and Figure 5 the Systemic Foresight Model (Saritas, 2006) showing the external environment in which Foresight is embedded (and therefore expected to improve) and the interrelationships of context, content and process within its internal context.

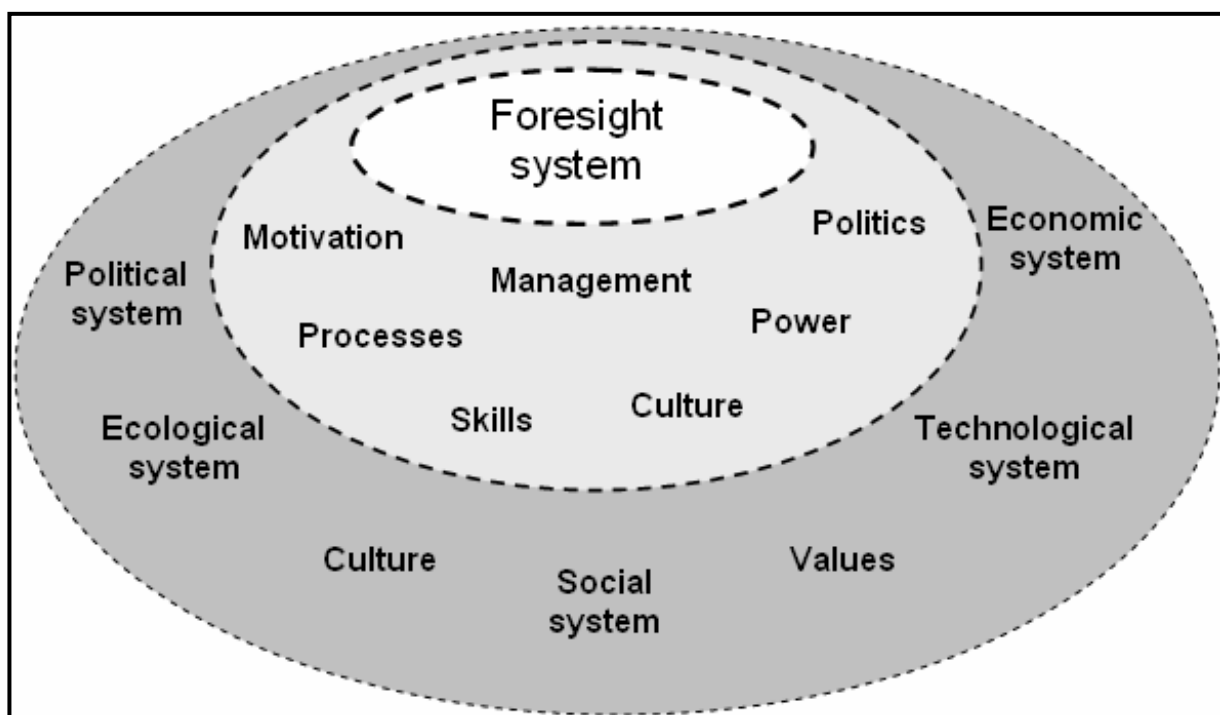


Figure 4: the Foresight system
Source: Saritas (2006)

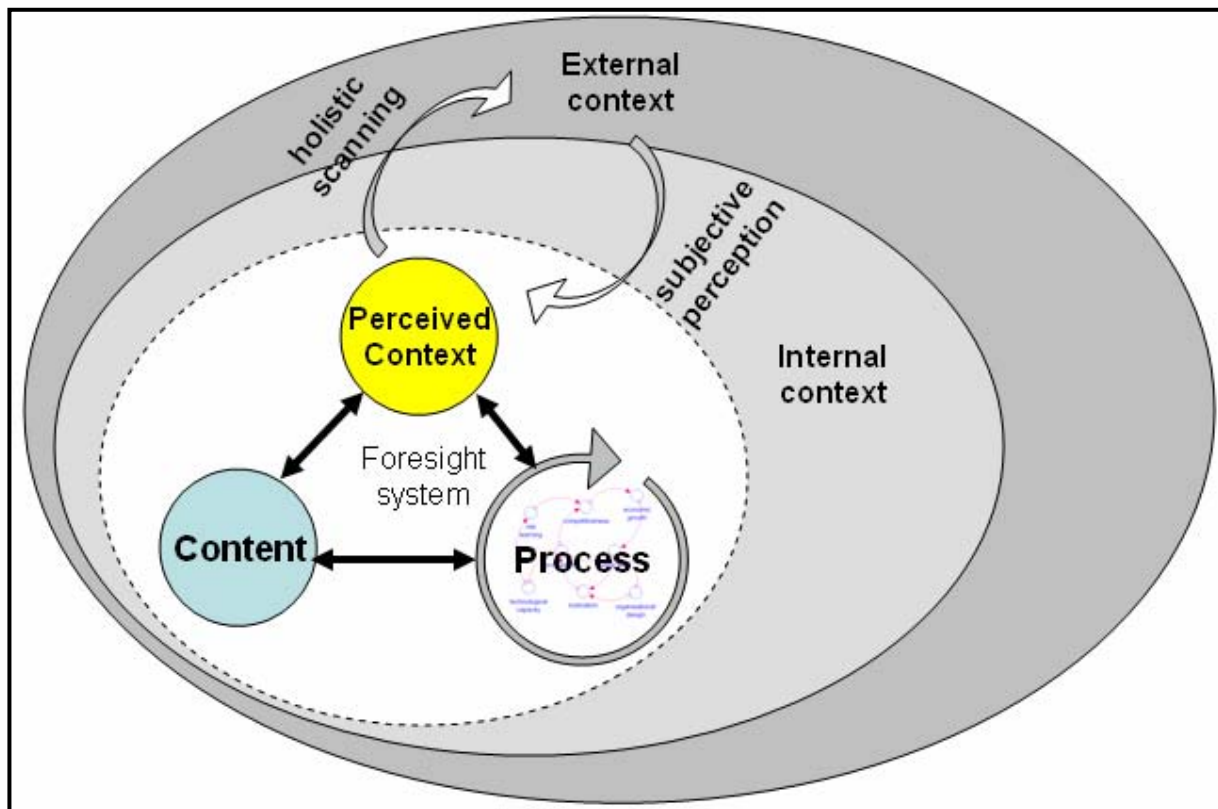


Figure 5: Systemic Foresight Model
Source: Saritas (2006)

It is important to highlight that both internal and external contexts are in a continuous transformation process and in an ever changing environment. To sum up, Table 5 summarises all the elements which compose Foresight.

Moreover, the systemic view of Foresight is based upon five mental acts:

- Understanding.
- Synthesis.
- Analysis and selection.
- Transformation.
- Action.

The understanding stage starts by seeking a reasonably comprehensive view of systems in a wider context. Later on it creates a mindset for understanding that context. The following step is to gain a shared understanding and mutual appreciation of systems in their current context, including personal worldviews and objectives, by uncovering uncertainties about the values, choices and the environment, and clarifying the goals of developing a strategy. The understanding stage does not try to bring about a convergence of views. However, at least a partial convergence is likely to emerge from this process to get a commitment for action.

The synthesis stage explores alternative courses for development and their integration into designs for a new context. Then it creates a future context from an existing one. Finally, it produces models of the future.

Elements	Description
Context	<p>External context</p> <ul style="list-style-type: none"> • Social, technological, economic, ecological and technological systems, and factors like legal, competitive and sectoral, which can be found in the environment where institutional Foresight is embedded <p>Internal context</p> <ul style="list-style-type: none"> • Structural and behavioural factors covering managerial, political, social and cultural aspects in the organisation of institutional Foresight
Content	<p>Goals</p> <ul style="list-style-type: none"> • The development of new practices • The improvement of existing practices for compliance <p>Structures</p> <ul style="list-style-type: none"> • Changes in the organisational structures • Introduction and improvement of technical/technological components and infrastructure <p>Behaviours</p> <ul style="list-style-type: none"> • Changes in the norms and attitudes • Changes in the roles
Process	<p>Design</p> <ul style="list-style-type: none"> • The organisation of the institutional Foresight activity • The systemic design of the exercise by considering the context and content <p>Practice</p> <ul style="list-style-type: none"> • The systemic deployment of designed process • The systemic formulation of policies and strategies <p>Implementation</p> <ul style="list-style-type: none"> • Change or improvements in the context in which the activity takes place • e.g. increasing the quality of life, creating wealth, providing sustainable development <p>Evaluation</p> <ul style="list-style-type: none"> • The evaluation of accountability, justification and learning in the context of Foresight <p>Continuation</p> <ul style="list-style-type: none"> • Continuous improvement through the continuation of the institutional Foresight activities in time

Table 5: Foresight elements
Source: Saritas (2006)

The analysis and selection stage is concerned with the analysis of alternative futures and decisions on the desired future. The normative goals identified and values shared are then considered in the analysis and a selection is made through the sharing of creative exchange of ideas and information among participants. The desired future context is then identified.

The transformation stage establishes the relationship between the future and the present for the change programme. It proposes transformations in:

- Goals
 - New practices developed.
 - Existing practices improved for compliance.
- Structures
 - Changes in the organisational structures.
 - Introduction and improvement of technical/technological components and infrastructure.
- Behaviours
 - Changes in the norms and attitudes.
 - Changes in the roles.

Finally, the action stage:

- Creates
 - Action plans to inform present day decisions concerning immediate change actions.
 - Structural transformations (e.g. transformations in organisational structure, technical/technological components and infrastructure).
 - Behavioural transformations (e.g. transformations culture, norms, attitudes, roles) needed for the first interventions in the existing situation.
- Identifies areas for research and developments.
- Plans resources (e.g. skills, time, and money).
- Starts initiatives.

Chapter 7: summary of practical work developed by participants and their assessment of the training

Towards the middle of Module 1 participants had about half an hour alone to start developing some ideas and the focus of their individual projects. Afterwards, in order to enable them to develop further their still provisional ideas, the training facilitators spoke in pairs to each participant for around half an hour. After this 'individual improvement clinic' at the end of Module 1 participants went home and had around a month to deliver their first drafts. In the meantime they could use the Yahoo group developed by PREST and jointly managed with JRC-IPTS to share any ideas or ask for any support, as well as to upload their projects and access all presentations given during the training and all participants' projects.

To start drafting their individual projects participants were asked to respond to a set of questions, which are outlined below. Moreover, participants were requested to take into consideration the need to understand both the system in which their Foresight exercises would be embedded and those systems that could be influenced or influence the system focus of each exercise. The five mental actions described in the previous chapter – understanding, synthesis, analysis and selection, transformation and action – was also considered as a requirement in the process.

Designing and Organising a Foresight Exercise

1. Getting Prepared for Foresight

Being Clear on Reasons for Using Foresight

Why are you undertaking your foresight exercise?

What type of outcomes do you expect from your foresight exercise?

Setting the Focus and Objectives

What sorts of focus does your foresight have?

What sorts of objectives are you going to set for your foresight exercise?

When and how are the focus and objectives of foresight set, and who is involved?

How will your focus and objectives affect the rest of the foresight process?

Setting the Time Horizon

What is the time horizon of your exercise?

What are the determinants of time horizon in your foresight exercise?

2. Understanding the context

Understanding the system

What are the main types of activities carried out in your focus area (sectors / themes / topics)?

From where does it receive inputs?

What type of outputs does it create and for whom?

Who are the main actors?

Determining the Coverage

Given the focus and objectives of an exercise, what sorts of sectors / themes / issues / territories your exercise cover?

How did you select the areas to be covered?

Determining the Users

Who are the potential users of foresight outputs and who will benefit from the outcomes of your exercise?

How will you identify and engage users in your exercise?

3. Inputs

Assessing Previous and Existing Work

What sorts of previous and existing work do you plan to review before starting your foresight exercise?

From where can this previous work be obtained?

In what ways might previous and existing work affect your exercise?

How do you relate your foresight to existing policies and programmes?

If a foresight exercise has already been undertaken in your area, how do you plan to use this experience for the benefit your own exercise?

Mapping Available Resources

What sorts of resources do you need in order to carry out your foresight exercise?

From where do you plan to obtain those resources?

What is the duration of your foresight exercise?

How many people do you need for your exercise and what sorts of qualifications should they have?

4. Setting-up a Foresight Exercise

Building Support

What sort of support do you need for your foresight exercise and why are these important?

From where do you plan to obtain such support?

How do you plan to promote your foresight exercise?

Building a Team

What kinds of skills and qualifications do you need for your exercise?

How will these skills be elicited?

Identifying and Selecting Participants

What kinds of participants do you need in your foresight and what are their roles?

How do you plan to identify, select and enrol participants for your exercise?

When do you plan to involve participants in your exercise?

Planning Communications

What types of communications do you need in your foresight exercise?

As already stated, the training approach was one of active learning based on a feedback loop where the training facilitators were continuously trying to bring all participants into a higher level of understanding through questioning, commenting and stimulating them to 'sleep-over', reflect and re-think the individual work they were carrying out. Therefore, after receiving the first draft of all participants the training facilitators took about a week to reply to them with individual comments and ideas to improve each project. All these were posted into the Yahoo group so everybody could learn from others experiences. Participants had then about two weeks to work

through their individual needs for progressing and deliver a second improved draft before the second Module of the training on June 12-13.

In the first two drafts participants were asked not to define which methods to apply since the second Module of the training would be devoted only to this. Hence they rather had to clarify their focus and objectives, the support needed for the exercise and how to secure this, the likely participants and how to engage them, their communication strategy, the expected results and how these could be achieved, which knowledge would possibly need to be brought into the Foresight team, to identify any previous work that could bring valuable inputs for the exercise, and finally the possible impacts of the exercise.

After having a broad view of the methods usually applied in Foresight exercises (Module 1) and an in-depth learning about Delphi, Scenarios and Roadmaps (Module 2), participants went again through another 'improvement clinic' of individual projects session at the end of Module 2. Here the training facilitators worked again in pairs and discussed all individual projects. Participants were divided into two big groups. In one group the same approach used in Module 1 was applied: facilitators discussing each individual project. In the second group, however, rather than speaking to each participant individually as in Module 1 the approach was to discuss all projects together within the group so everybody could help one another. This approach proved to be very good since everybody participated very actively in each of the projects being discussed. This helped participants to identify possible different stages for each project and which methods to apply in each of these stages in order to attain the expected partial and final expected results and impacts. Participants then went home and had around three weeks to deliver their third and final complete drafts.

Annex 1 contains a copy of all individual projects developed by the participants. On the basis of these projects the main challenges that NMS and CC face and that Foresight could play a positive role in would be:

- Facilitating the integration of NMS and CC within the EU.
- Identifying opportunities for socio-economic (local) developments and a better balance at regional, national and EU levels.
- Supporting national growth and competitiveness with benefits being transferred into regional and local developments.
- Raising the knowledge and skills needed to develop specific strategic sectors for the country.

The focus of individual projects was extremely diverse. They included:

- Agriculture, use of land and natural resources, and tourism, all with a view of leveraging local culture and promoting sustainable development.
- Infrastructure (e.g., transport, water industry, space and development planning, etc).
- Priority research areas (of a national university system aiming at a better cooperation between academia and the industrial sector or of specific areas such as in social sciences and humanities) with the objective of increasing competitiveness and improving human resource abilities in research.
- Priority economic sectors or technology areas to build upon national and EU strategic developments, including the identification of key drivers and barriers to its commercial exploitation.
- Quality of life enhancement and diffusion of democracy and human rights.
- Creation of a Foresight culture.
- Fostering a more competitive SME sector.

- Shape a (local, regional and national) research, technology, development and innovation (RTDI) strategy through policy recommendations.
- The global role of EU, moving beyond the Lisbon Strategy, and taking into account further possible enlargements.

The common outlined barriers can be summarised as:

- Need for political/governmental support and involvement in the exercise.
- Need for overall society or at least all relevant stakeholders participation/representation and to build a shared vision of where to go.
- Need to build ownership and engage participants throughout the exercise.
- Need for financial support (i.e. dependence on governmental and EU funding such as need to plan in accordance to the seven-years planning period of EU structural policy).
- Need to create awareness on the benefits of Foresight as a policy support instrument.
- Need to establish cooperation and better communication (through a network approach) between different institutions (e.g. government, business, universities, NGOs, associations, etc) at local, regional, national and EU levels.

The JRC-IPTS could possibly meet at least one of the above challenges by fostering and helping to create awareness on the benefits of Foresight as a policy support instrument at EU level, especially for NMS and CC. The reason for this is that currently under the FOR-LEARN project there is a strong focus on better understanding how a Foresight exercise should be designed to attain stronger impacts on the policy making system. Therefore, the following stage of FOR-LEARN could focus on bridging the linkages between design, impacts, contexts and benefits so that policy makers would better accept Foresight as a valuable input for policy decisions, both as a process and its resulting products.

The most common problems faced by participants while developing their exercises were related to their ability to:

- Clearly outline the system (with the interrelationships between relevant actors and variables) in which the exercise was focusing upon.
- Identify the likely users of the exercise and its outcomes beyond sponsors and those responsible (e.g. ministries) for shaping the policy focus of the exercise.
- Define with precision, with few exceptions, how the exercise should be organised outlining the various steps and methods needed as well as the skills needed to be brought into the exercise (e.g. through training, outsourcing or subcontracting) to enable the achievement of the expected partial and final outcomes and impacts.

The lessons learned from this experience show that possibly an extra day for such an in-depth training would be required. This would enable a better balance between theoretical and practical sessions, and this seems critical to facilitate the understanding of participants on the system being considered, focus of their projects, and the relationships between the relevant variables within such system. By having clear the context and the important actors that need to be considered to attain the expected outcomes it becomes a lot easier to design and plan the exercise.

However, in spite of the above mentioned difficulties that participants faced during the development of their projects, the evolution of their work was quite outstanding. For instance, many participants were not able to clearly define a focus for their exercises in their first drafts. However, their third and final drafts had not only outlined a clear focus and objectives, but also good communication strategies and, in some cases, very detailed identification of resources

(e.g. financial, skills, time, etc.) and overall structure (including definition of the Foresight team, participants, and of the exercise's dissemination strategy).

Moreover, the basic concept of the training was one of enabling participants to understand the principles of Foresight and to learn what should be done when planning, designing and managing an exercise. The idea was therefore to bring participants to think about their individual country's context and on identifying possible areas for improvement where Foresight could have a positive role to play. Later they had to develop further this idea by designing a model exercise that would, however, have not only the characteristics of a real exercise, but also the possibility of being applied in practice if certain conditions could be met (such as securing the support needed, both political and financial).

Hence, the objective of the training was more one of achieving at simple and coherent projects rather than having a full detailed description of each of the issues that need to be taken into account when designing a Foresight exercise. To this end the training is regarded to be a success since the evolution of individual projects from draft one till draft three or final projects shows that the way that the training was devised – in two Modules, mixing theoretical and practical group and individual sessions throughout, and with homework being carried out in between both Modules – provided a optimum platform to leverage the participants' absorptive capacity through a learning by doing approach. In the words of one of the participants after the training: *"As a member of the Steering Group of the JRC Enlargement and Integration Action in Support of Foresight Activities in New Member States and Candidate Countries, I am pleased to state that with the "two Module system" you have overcome the common shortcomings of foresight training courses: the oblivion. The individual home-work raised the personal awareness of participants, which helps learning by doing. Congratulation!"* (Anonymous).

At the end of the training all participants were given an evaluation form (Annex 2) to assess both the learning provided and the approach adopted. Overall, the main messages were:

- It was almost unanimous that the learning by doing interactive approach adopted as well as the sharing of experiences and ideas between participants were effective.
- Some participants expressed a wish that there was more time for individual interactions with the facilitators and for more practical sessions.
- Some participants thought that the content covered was far too large for a four-day training (split in two Modules of two days each). Thus, it was stated that the training could have been even more effective if each Module lasted three days instead of two.
- Some participants asked for further support (e.g. through consultancy), cooperation and lobby at EU and Member States levels in the direction of developing further and implementing their projects in reality (propose it to the relevant authorities). Some even asked JRC-IPTS to help convincing the politicians of their countries on the importance of implementing such projects.
- A report or notebook collecting all the lectures given and guidance on further literature was regarded as useful.
- Some participants said that they would have liked to learn about other methods beyond the selected ones (Delphi, Scenarios and Roadmapping)
- Some asked for more case examples of real Foresight exercises.
- As additional topics for further training, participants highlighted the application of Foresight for R&D policy making; more methods and more time spent on methodology; the use of Foresight at governmental level; and a better clarity on the relationship between Foresight and policy making.
- Some requested more practical work on the methods sessions (Delphi, Scenarios and Roadmapping).

- Examples of the implementation of the results attained with Foresight exercises (impacts) in practice were also requested and may be an issue to be explored in future training exercises.

Chapter 8: JRC-IPTS lessons learned and implications for future training activities as well as on how to facilitate Foresight in NMS and CC

From the JRC-IPTS point of view the methodological approach adopted was highly effective and all objectives set from the outset were attained. The approach adopted is considered to have been critical in enabling participants to accomplish the proposed tasks. The initial objectives when designing the training were to:

- Raise awareness of key individuals within NMS and CC of the benefits of using Foresight as a policy instrument, both in facilitating the process and informing decision makers.
- Guide participants through the basic concepts and main steps needed to design a Foresight exercise, enabling therefore each participant to design a project from scratch.
- Coach participants in their learning through a feedback process which would enable them not only to build on the theoretical and practical sessions delivered but mainly on the individual work they were required to undertake.

Moreover, it is possible to state that most participants did achieve a fairly shared understanding of Foresight at the end of the training. This was possible because of a combination of elements:

- Practical individual and group sessions where participants had to apply the theory handled by experts into both their individual projects and the group exercises developed during the training.
- Individual face-to-face sessions where the training facilitators spent time alone with each participant clarifying specific doubts and stimulating each person to go a step beyond in their individual projects.
- Group discussions in which everybody did actively participate and that aimed at improving the individual projects as well as on sharing individual experiences and learning.
- The work carried out by participants in between the two Modules which was critical to keep momentum and to leverage individual projects through a targeted individual feedback from the facilitators.

The use of a simple platform as the Yahoo groups also played a positive role in keeping participants engaged and updated with the homework that each individual was delivering and the presentations given during the training. This platform also functioned as an effective communication tool where everybody could post a query and have access to the subsequent answers as well as in helping JRC-IPTS to manage the whole organisation of the training.

On the negative side, some of the presentations were too long and academic. For this reason sometimes it was difficult to keep the full attention of all participants' at all times. It may be this also the reason why some individuals felt it was difficult to link what was being said with real practice. Nevertheless, the practical sessions which built upon the lectures functioned very well in translating theory into practice and in enabling participants to cope with the amount of information being delivered.

Therefore, a possible lesson learned for future training activities is that lectures should be no longer than thirty minutes and that theoretical sessions should always be followed by a practical exercise. This would help to keep participants more active and also enable them to fully understand the lectures by, for example, devising together an exercise in group during the training. Possibly this would also assist participants in devising their own individual projects. However, this may require the training to be expanded from two days per Module into three

days, as stated before when raising the need of attaining a better balance between theoretical and practical sessions during the training.

Based on the feedback received from participants at the end of the training it is possible to suggest that a way of facilitating the use of Foresight as a policy instrument in NMS and CC would be to undertake the following two actions:

- Awareness raising in each NMS and CC of what Foresight is and how it can be used as a policy facilitating and informing instrument – this would require engagement with the relevant authorities and/or institutions in each country in order to organise workshop-like activities to present and discuss how Foresight could be applied to each country's context. Possibly representatives of all relevant stakeholders in each NMS and CC would also need to be engaged.
- Devising specific training activities targeted at NMS and CC – today this is done mainly through specific requests. Possibly in order to stimulate demand it would be necessary initially to develop a better understanding of the current challenges and needs, both common to more than one NMS and CC as well as to each individual country. It would also be relevant to build synergies with other training activities available at EU level which are targeted at NMS and CC. In this regard IPTS has already initiated a dialogue with UNIDO seeking to leverage training efforts.

These needs meet exactly what has been raised by previous projects, the most relevant being the Pilot Project to Scope the Establishment of a European Foresight Academy (EFA)¹⁵. This project aimed at scoping the needs for a cross-national capability-building activity in the area of Foresight within Europe. A review of the demand for Foresight capacity-building activities in Europe raised the following needs (Keenan & Scapolo, 2004): awareness-raising workshops directed primarily at policy makers; development of Foresight methods 'toolbox' training courses; training courses focused upon state-of-the-art Foresight methods, including the use of ICTs in Foresight; training in the management and organisation of Foresight exercises; courses on how to use (absorb) Foresight results for successful implementation outcomes; workshops where organisations can discuss the implications of Foresight results for their own policy areas, business sectors, etc.; courses for explicitly multiplying Foresight practice through the training of trainers and teachers; development of university courses, ranging from individual modules embedded in other courses through to full Masters programmes; and workshops where practitioners and theoreticians can meet to share ideas and experiences.

On the supply side there seems to be a small number of open access executive education and academic programmes available and there will be a need for expansion if latent demand is to be awakened (Keenan & Scapolo, 2004). The issue of strengthening the Foresight community to enable it to deal with a possible increase in number of requests as well as in uncovering the appropriate mechanisms for developing the capacity of the community and how might these most effectively be established are all part of the current debate both among practitioners and academics¹⁶.

Taking into account the needs outlined above and the underlying opportunities it is possible to affirm that JRC-IPTS has identified a highly effective methodological approach that can be further improved and adapted both to the specific contexts and current challenges of individual

¹⁵ Keenan, M. & Scapolo, F. (2004): Pilot Project to Scope the Establishment of a European Foresight Academy – Based on a European Science and Technology Observatory Project. Technical Report EUR 21406 EN.

¹⁶ For instance, there was a special workshop within the Second International Seville Seminar on Future-Oriented Technology Analysis (FTA): Impacts on policy and decision making, 28th- 29th September 2006, targeting exactly on ways to enhance the present capacity of the FTA community. The FTA acronym refers to strategic foresight, forecasting and technology assessment.

countries in order to facilitate Foresight in NMS and CC. The development of both workshops and training activities comparable to this exercise could provide the basis of such a platform.

JRC-IPTS could try to identify through the JRC Enlargement and Integration Action the relevant stakeholders in each NMS and CC (e.g. policy makers, universities, etc) to offer tailored training and/or awareness raising workshops. In addition, JRC-IPTS could engage with Foresight experts to devise training Modules that can target either common needs of NMS and CC or that are generic enough to be offered to all NMS and CC, such as the one which is being reported here.

Both paths are complementary rather than being mutually exclusive. Therefore, the learning provided through this training activity will be a major input for the development of future activities under the JRC Enlargement and Integration Action.

It is important to highlight that the existing training activities within Europe are scattered. Foresight knowledge providers usually work independently and competing for the training market rather than collaborating. At the same time institutions offering training on Foresight use a very limited source of external experts. As a consequence the main difference between training activities tends to be in the methodological approach adopted and on the issues being covered rather than the content itself. Ultimately this increases the end customer difficulty in identifying which course to follow as there seems to be a number of similar activities going on at the same time.

In this regard the JRC-IPTS is aiming to contribute further to the development of a Foresight knowledge base by bringing together the main actors in the field and therefore join forces instead of allowing efforts to continue being duplicated. In this direction one of the activities to be explored in the future is to identify best ways of transmitting Foresight knowledge by engaging in a discussion with the main players operating in the market as either knowledge or training provider. Such a discussion would depart from a sharing of individual experiences where the methodological approach outlined in the present report would be one of the platforms debated. A better understanding on how to best transmit Foresight knowledge and which methodological approaches can effectively contribute to this end will become a major milestone in enabling Foresight to be widespread used as a policy informing and facilitating instrument.

Annex 1: participants' final projects

Project 1: Determining Future Research Topics in Social Sciences and Humanities in Turkey.....	41
Project 2: Polycentreg 2027	45
Project 3: Sustainable Territorial Development of the Rural Areas of Hungary.....	53
Project 4: Macedonia's justice system 2020 (judiciary and law enforcement agencies)	56
Project 5: Regional Foresight in Trencin Region, Slovakia.....	60
Project 6: The Romanian Technical Universities in 2017	65
Project 7: Project Plan for Czech Republic	68
Project 8: Foresight on Tourism in Bulgaria	71
Project 9: The Future of Medicinal Plants Products of the Andean High Plateau and Central Valleys	83
Project 10: Lithuanian Research 2008 – 2017: National Priority Settings for Research and Technological Development for Better Fulfilment to Society Needs	91
Project 11: The Rural Sector in Cyprus – A Long Term (Up To 2050) Perspective	95
Project 12: ForeMat – Polish Scenario for Development of the Modern Material Technologies in Perspective 2020	97
Project 13: Technology Foresight Programme for Irkutsk Oblast (IO).....	101
Project 14: Creation of Visions for Policy Making "Europe 2025 Project" – Governance Futures	106

Project 1: Determining Future Research Topics in Social Sciences and Humanities in Turkey

RATIONALES & OBJECTIVES

Research in social sciences and humanities (SSH) should be supported through research themes and priorities in which social science work predominates. There should be an overall strategy for SSH. For national organizations such as TUBITAK mandated to promote research in social science, this range of activities presents a challenge. As well as concern for whether the thematic content provides opportunities for the best social science to achieve maximum impact upon national and European goals, there are also issues concerning which structures and instruments best favour the SSH.

This foresight exercise aims to

- identify a small number of high level priorities in the SSH that could help/guide to Research Group namely Social Sciences and Humanities Research Group which gives financial support to SSH researches,
- to identify some key emerging research priorities in the SSH which could contribute to national research goals and be supported by it,
- to consider appropriate funding mechanisms for implementation, to reflect and build upon developments not only in Turkey but also in Europe.

By determining these priorities, it can be possible to understand the socio-economic and cultural problems of Turkish citizens for 10 year time. It is known that the societal problems of each country differ from the others and it is not rational to plan the researches only in the area of EU or World Bank supports. That's why; this kind of foresight exercise will be practical. The type of outcomes expected will be mostly product oriented such as a vision which aims to understand the societal issues and use SSH for societal benefit, build national SSH research system and integrate with worlds' science.

SETTING THE FOCUS

In Turkey, in order to integrate the country within the EU, numerous policy changes and improvements were made and still some of them are going on. There is a need to identify the major social science challenges that the country is facing in a globalised world, and that SSH is accepted and recognized as a valid, heterogeneous approach to understanding and informing policy. That's why, this exercises' focus will be social life with economic and cultural issues, and as a geographical focus it can be selected both national and EU level.

DETERMINING THE COVERAGE

In this exercise, there will be two stages. First one is to explore possible futures for SSH in Turkey and the second stage is to ask academicians working in SSH area whether these research areas are the preferential or not.

In the first stage, it is needed to select some priority research areas and for that purpose, specific areas related with SSH mentioned in Frascati Guide is going to be used in order to consider appropriate funding mechanisms for implementation, to reflect and build upon developments. In this guide, there are 24 research and technology topics under the SSH category, namely;

- Psychology
- Economy
- Education
- Anthropology and Ethnology
- Demography
- Geography
- City and Rural Planning
- Management
- Law
- Public Administration
- Sociology
- Organisation and Methodologies
- History
- Literature

- Linguistics
- Philosophy
- Arts
- History of Art
- Art Criticism
- Painting
- Sculpture
- Music
- Theatre
- Religion

These 24 topics can be categorized under 6 main groups, such as 'Economy', 'Psychology and Cognitive Sciences', 'Sociology, Anthropology and Culture Studies', 'History', 'Political Sciences', and 'Arts'. The appropriate time to determine the areas to cover (first stage) will be 1 year. And for the second stage, it is going to be 2 years to identify and ask the academicians whether these selected areas are the most best choices as a SSH area.

SETTING THE TIME HORIZON

The approach which will be adopted for the exercise is using scenarios and Delphi statements to explore possible futures and responses to them. The fact that the drivers of SSH at national level need to be examined in relation to a timescale, 2017 can be taken as reference year for this exercise. 10 year period is chosen because, 5 year is too short for a foresight exercise and 20 years is too long for SSH field in the sense that, the socio-economic and cultural problems can not be predicted such a long time period.

DETERMINING THE USERS

The main sponsor will be government for this exercise and again it will be the main user of this exercise as national research funding mechanism (TUBITAK) which is directly connected to prime minister. Other users can be plenty of Ministries such as, Ministry of Education, Ministry of Health, Ministry of State in charge of Treasury, Ministry of Trade, Ministry of Labour and Social Security, and Ministry of Internal Affairs whose working areas are closely related to SSH. And also, one of the biggest users will be social and humanities scientists and researchers working in these areas. It is expected to academicians will use these research topics because; these topics will be very closely related to understand and solve the problems of Turkish citizens, and this is one of the biggest jobs of academicians.

ASSESSING PREVIOUS AND EXISTING WORK

SSH is one of the neglected areas in Turkey. That's why, there are no or very little previous works related with this issue. However, there is a foresight exercise namely Natural Sciences Foresight Exercise done by TÜBA and supported by State Planning Organization (SPO) of Turkey. Also, there are some strategy documents of SPO indirectly related with the issues of SSH areas. This exercise can be reviewed as well as other foresight activities done in Europe such as the one done by the Institute of Innovation Research, University of Manchester.

MAPPING AVAILABLE RESOURCES

When this exercise is compared to Vision 2023 whose estimated cost was €200.000 and content was more comprehensive, it seems that the estimated cost of this exercise is less than €200.000. TUBITAK which is the key actor in every Foresight initiative will provide 100% of the budget from its own resources. The exercise can be planned for a 3-year period. In the beginning, a core group of academicians' working in one of the 24 research areas mentioned in Frascati Guide, will be used to define the priorities, and they can be given some amount to participate in the exercise. After defining priority areas in SSH, it will take some time for waiting the responses from professors and associate professors from SSH area of Turkey. TUBITAK staff gained notable experience from Vision 2023 and for those who does not know anything about Foresight, can learn by attending UNIDO courses during the preparation phase. Besides internal expertise, external expertise can be mobilized. It is going to be cooperated with a research institute which have Delphi experience. In addition to this, as skill resources, it should be needed to find panel leaders who have organizational skills. Also, in some degree, there are always some debates between SSH academicians, and it is needed some people who have special skill to sum up the academicians having opposite ideas.

BUILDING SUPPORT

The experience from Vision 2023 shows that the success of a national level foresight programme is directly related to the “political will”. It is known that success would only be possible if the government took the policy proposals seriously in SSH policy making. Therefore, obtaining support from the government is crucial. Support from society is crucial. The exercise aimed for wide participation from society in order to develop a sense of ownership over the policies arrived at. The ownership is the key for a successful implementation of the outcomes of the exercise. That’s why; both government and society will be consulted during the exercises through the meetings.

DESIGNING THE METHODOLOGY

Designing or selecting the methodology is one of the difficult subjects both for SSH and for a foresight exercise. Pragmatism can be selected as a philosophy, because identifying possible futures or solutions for socio-economic and cultural topics and problems will make Turkish citizens life wealthier in socio-economic sense.

SELECTION OF METHODS

After a quick search for the design of the methodology of Foresight programmes related with SSH of other countries, it is noticed that scenario workshops and Delphi method are the widely used. That’s why; the exercise will use scenario workshop and delphi method. As a first stage, some scenarios can be built and can be given to the panels prior to their work. These initial scenarios will be used to integrate the information: exploring futures of SSH in a problem solving service function. Then, without feeling the pressure of scenarios, the exercise will use Delphi method, attended by experts for each of the 24 topics mentioned in Frascati Guide, to build a picture of what success would look like for SSH in Turkey. By using the delphi method, key drivers of future developments covering macro-issues, developments in SSH and especially European support structures for research will be articulated.

ACTORS & ORGANISATION OF FORESIGHT

- TUBITAK (coordination/management team) - TUBITAK will be the coordinator of this exercise. The management team of the project will be constructed by involving people who have professional experience competence on project management, research, policy-making, and communication skills.
- Project Office- formed within the two departments of TUBITAK namely, Social Sciences and Humanities Research Group and Science and Technology Policy Department. This will consist of nearly 10 people with different backgrounds and a good command of English. The Project Office will be responsible for the implementation of the exercise.
- Steering Committee- consisting of representatives primarily from academia, then from governmental institutions, private sector organisations and NGOs will be formed as the top-level organisational body of the Foresight exercise. The Committee will be responsible for guiding the project by taking strategic decisions and approving the reports and policy recommendations generated during its implementation. The Steering Committee will be the highest governing body. Steering Committee meetings can be held in the course of the programme to make major decisions and to approve outputs.
- Executive Committee- chaired by the President of TUBITAK, thus bringing representatives of the Steering Committee with administrative officials of TUBITAK. Operational and budgetary decisions will be taken by the Executive Committee.
- Panel Core Groups- appointed by TUBITAK. These groups will be composed of selected participants (e.g. panel chair, panel secretary and/or a member of the panel) from each panel to provide lateral communication between the panels. These groups will be responsible for facilitating dialogue between the panels.
- External expertise can be provided by national and international advisors.

PARTICIPATION AND IDENTIFYING PARTICIPANTS

After the decision on setting the expert panels by steering committee, a core group, which will be appointed by TUBITAK, will propose the names of experts for each panel. Also, government, universities, NGOs such as Sociological Association and Turkish Economic and Social Sciences Foundation which are “powerful” NGOs in Turkey about SSH issues will be asked to nominate names with expert nomination forms sent. Thus, co-nomination will be then main method used in identifying and selecting participants for two stages of exercise. The process will

work mainly through e-mails sent to the members of the Steering Committee. They will be asked to provide further names of the experts who would take part in the exercise.

After collecting the names, the TUBITAK administration will choose the panel members from among them. Most of the members will be academicians from social sciences and humanities, but there will be representatives from private sector, public bodies and NGOs.

For the identification of the participants for the Delphi survey, the databases of TUBITAK will be used. These experts in the database will be invited.

Project 2: Polycentreg 2027

REASONS FOR USING FORESIGHT „Polycentreg 2027“

The aim of the foresight exercise is to develop a foresight culture and to improve the decision-making and development planning process in regional policy field, that would take into account the possible future perspective and wider external scope which impacts the spatial urban network developments and its effect to the overall regional development in Estonia.

The foresight exercise outcomes should be used as a real base for a policy making processes in longer-term time perspective (as well for regional policy itself as for different sector policies) to attain more balanced regional development and to reduce the regional social-economic disparities in Estonia. The polycentric development conception that has quite widely spread in national regional policies in EU has not been sufficiently involved in Estonian regional policy yet and it has rather stayed as a declarative notion. Accordingly indirect goal of the foresight exercise is to develop the polycentric development conception also as a sufficient and practical tool in Estonian regional policy.

Internal polycentric development strategy should be also integrated to broader international inter-regional cooperation networks (like Eurocities, EUKN, Urbact etc) to strengthen its positive synergetic impact to improve as well national growth and competitiveness at international scale as transfer its benefits into regional and local development.

THE FOCUS AND OBJECTIVES OF „Polycentreg 2027“

The overall domain of the foresight is proportional changes in spatial settlement structure and regional social-economic development.

Foresight has a thematic focus – possible future trends in proportional changes of spatial settlement structure in Estonia, which longer-term changes may occur in position of development for different settlement types (*major urban centers, other county-centers and smaller towns, hinterlands and periphery areas*) and how these changes would affect regional development in the whole territory of Estonia.

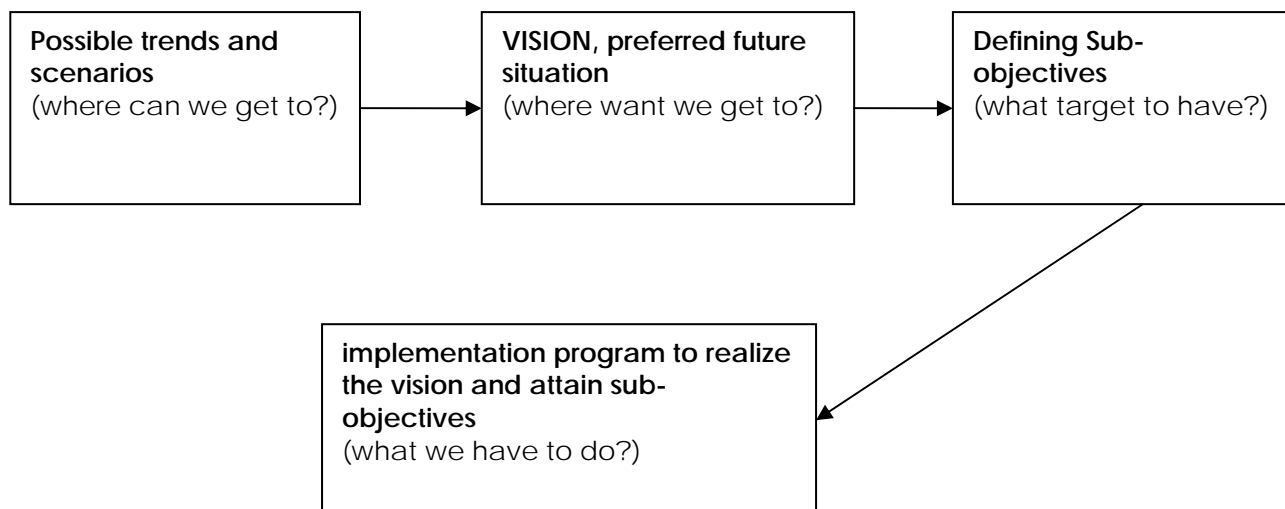
The clear prediction is, that the role of urban center areas will not weaken because of continuing high demographic and economic concentration into (larger) urban areas (the question is only in possible changes of the role's strength). That circumstance is also the main reason why the focus encompasses also the issues how to develop the polycentric development conception as a regional policy instrument in future, taking into account abovementioned trends and how to use the outputs of urban areas development to enforce development also in hinterlands and periphery regions and to attain balanced regional development.

The spatial focus of the foresight is as well national as regional and local at the same time.

The main objectives of the foresight are:

- Formulation of different possible future scenarios on developments in spatial settlement proportions in issues of demographic and social-economic position of different settlement types and areas in Estonia (typological division between major urban centers (Tallinn, Tartu, Pärnu); other county-centers and smaller towns; hinterlands; periphery areas). Also formulizing their changing positions and roles in competitiveness at global/EU, national and regional/local level. The scope of these trends covers demographic, economic, social, cultural and political power levels.
- Setting up the VISION (as a favoured and preferred future trend) about the spatial settlement proportions, the positions of different settlement types and areas in spatial development and about the polycentric development model, which could also function as an efficient system for the whole territorial development in Estonia;
- Formulating sub-objectives (as suggestions to policy directions) to support polycentric development in regional development by which to move towards the vision. The policy is horizontally targeted to improvement of qualitative networking and communication.
- To create an implementation plan to support moving towards the vision and to implement the polycentric development conception efficiently on behalf of the intact territorial development. The implementation contains sub-objectives to move towards, concrete activities by which to attain these sub-objectives, responsible actors in these activities, timeframe and finances.

Process scheme:



The focus and objectives have been set in the very first phase of the foresight exercise process. Focus and objectives were set because there is a need to provide a more efficient and balanced regional development in the whole territory of Estonia in continuing situation where population and economic development is concentrating into urban centers and disparities between central and peripheral regions are growing. Many experts on regional development issues, economists, social scientists, politicians and experts from ministries will be involved in the process of setting up the precise focus and objectives (for example).

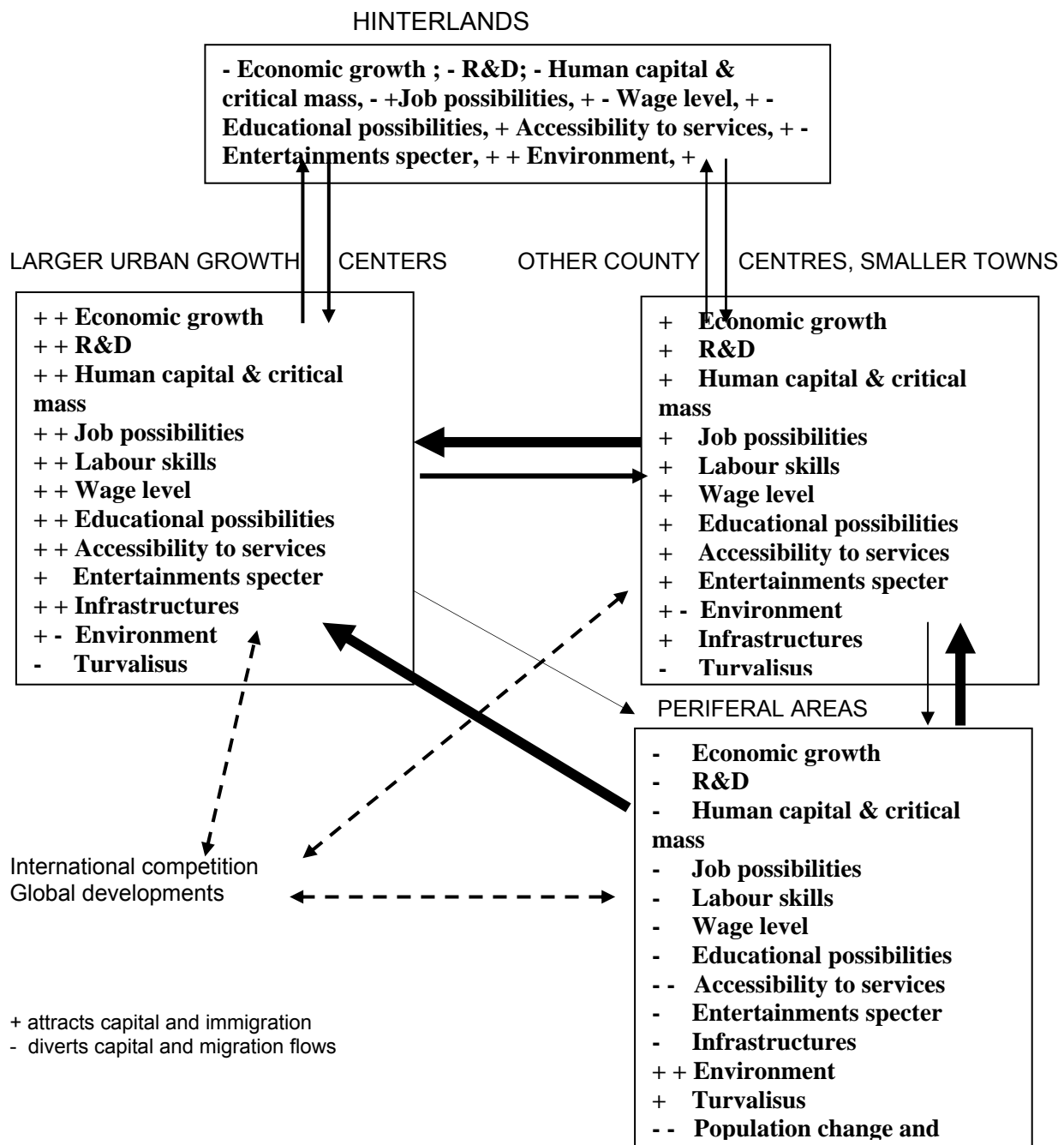
TIME HORIZON

The time horizon for the (exercise) Foresight covers 19 years period (2008-2027). Such a time horizon has been determined according to circumstances that policy formulation in that field needs to take into account longer-term predictions about trends of changes in spatial settlement structure and the objectives should be formulated for longer-term time perspective because the possible positive impacts of the policy implementation could occur only after a time-delay. Another important reason for such a time horizon comes from 7-years planning period of EU structural policy. In new member states the implementation of national (regional) policies depends significantly on EU structural policies and especially on its finances. The time horizon of the foresight (exercise) "Polycentreg 2027" covers three EU structural policies planning periods and it enables to consider the objectives of the Foresight better also in planning national implementation programs for EU structural funds.

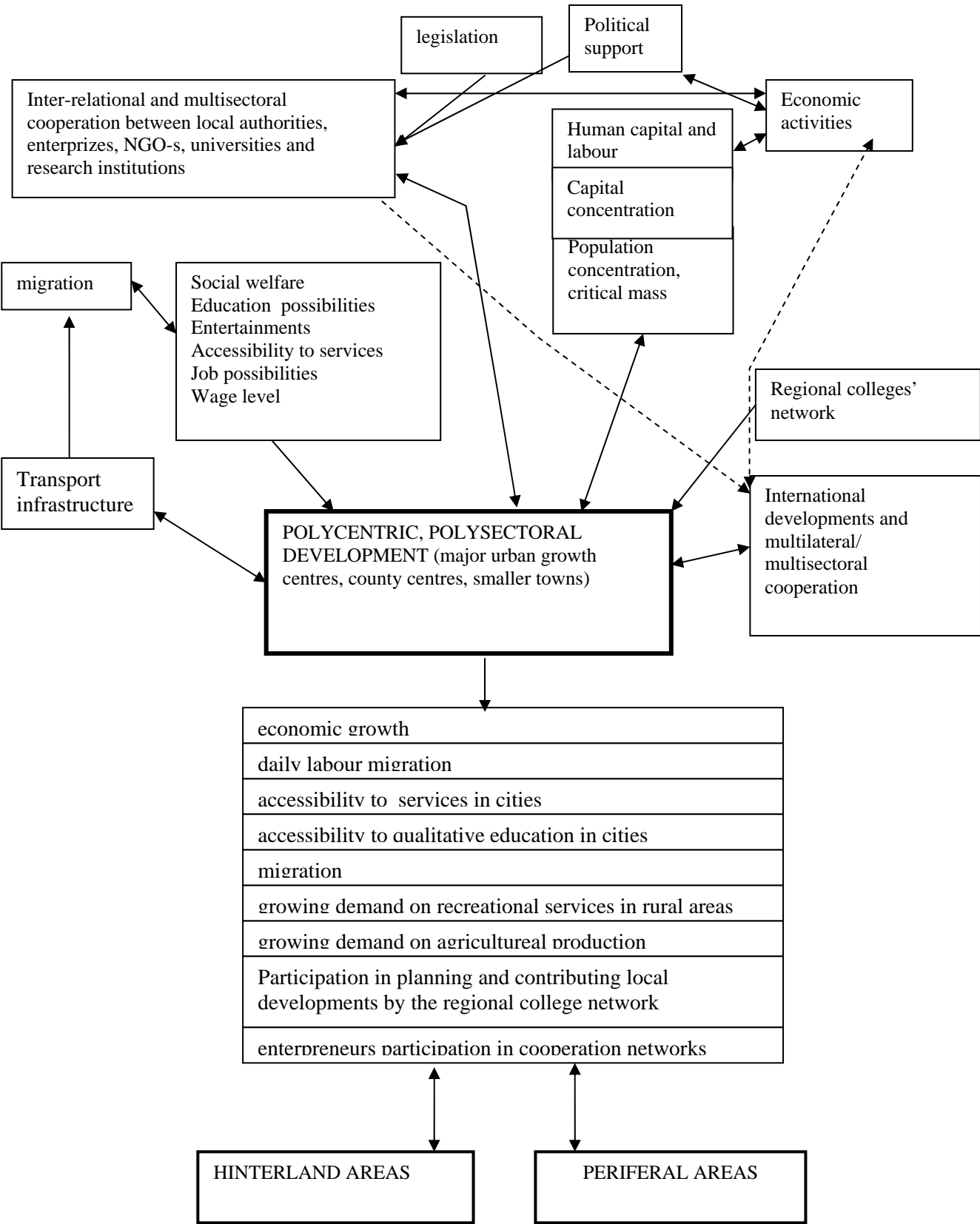
UNDERSTANDING THE SYSTEM

The focus of the foresight covers many different activities. Regional development issues cover a very large amount of sectors, themes and actors. Following schemes give a common overview about the interrelationships between the main system elements, sectors and actors affecting the foresight focus area.

Systematic simplified scheme about main determinants forming proportional changes of spatial settlement structure and conditions for development in different settlement types.



Conceptual model about interrelationships between key determinants and actors in polycentric development system and its possible impacts to regional development



DETERMINING THE COVERAGE

Thematic and spatial coverage of the foresight exercise “has been” set by composing a RELEVANCE TREE about specific areas and mechanisms that have an impact on shaping spatial settlement proportions and conditions for social-economic development in different area types, especially outside urban centers. The relevance tree “was” composed by foresight team using a classical BRAINSTORMING. As a second step, foresight team made a synthesis about the results of relevance tree and chose.

6 major areas to investigate (in scenario building and developing the polycentric development conception and implementation program as a regional policy tool. The scope covers demographic, economic, social, cultural and political power areas and education and research.

The spatial coverage “was” determined in round-table discussions, and finally was decided, that the foresight should cover the whole territory of Estonia divided typologically classified between:

- major urban centers (Tallinn, Tartu, Pärnu);
- other county-centers;
- smaller towns; hinterlands;
- periphery areas.

The foresight takes into investigation different settlements and areas (that are classified into abovementioned groups) changing positions and roles in competitiveness at global/EU, national and regional/local dimensions.

METHODS

First step – using SWOT (to define internal and external factors that impact the object of the foresight and to determine present strengths, weaknesses, and possible opportunities and threats of spatial settlements’ proportional structure from the point of social-economic development situation and conditions in different settlement types and areas).

Second step - scenario building to formulize different possible future scenarios on changes in spatial settlement proportions in issues of demographic and social-economic position of different settlement types and areas in Estonia. Building scenarios bases on certain key-determinants and probability for key-events that impact changes in spatial settlement structure and scenarios are explorative and descriptive. There should be 4 different scenarios – a reference scenario, most probable, positive (preferable) and negative scenario. Scenario building is closely related to outputs of SWOT analysis.

At the final phase of the foresight – formulizing the polycentric development conception and implementation plan (to support moving forward the preferred future scenario and to avoid the negative one coming true) should be carried on using ROADMAPPING. Coverage concerning the implementation program of the polycentric development conception should concentrate on certain key-areas or themes to develop through the polycentric development strategy that derive from the synthesis of the results of 5-3-2 METHOD (ANONYMOUS BRAINSTORMING) taking also account basic developmental problems and needs in peripheral areas and hinterlands. These developmental problems and needs should be closely linked to the results of probable future scenarios.

DETERMINING THE USERS

There is no need to define the users of the Foresight strictly, because everybody who wants could use it for any purposes that foresight could help or get any kind of benefit from it.

The client of the Foresight exercise is the Ministry of Internal Affairs, who “is” the main user of the foresight “Polycentreg 2027”. The Ministry of Interior is also the sponsor of the foresight exercise.

However, the main potential users of foresight outputs are relevant ministries (foremost the Ministry of the Internal, Ministry of Economy and Communications, Ministry of Education and Science and Ministry of Social Affairs). Ministries could use the outputs in its policy-forming and decision-making processes. Other main potential users are county governments and local governments – in decision-making and strategic planning processes and composing regional or local development strategies and formulating long term priorities in different areas.

A possible output of the foresight is also to create a possible input for forming Estonian urban policy, which has in central level been very weakly developed up to present. The foresight “Polycentreg 2027” could be source

information to urban policy as forming the possible future trends about changes in settlement structure proportions and development positions of different cities and city areas. As developing the polycentric development conception and the implementation program as a regional policy instrument it gives also an input to urban policy and its implementing mechanisms.

There are also other groups of potential beneficiaries of foresight outputs:

- * Politicians and political parties – in decision-making and forming political directions;
- * Private companies, banks and other institutions – using foresight outputs for planning the future location of their production corps and branch offices;
- * Research institutions – using foresight outputs as information.

Representatives from each group of potential users are also engaged in foresight composing process, especially in developing the polycentric development conception and the implementation program. They participate in round-tables and give feedback to the draft versions of the foresight document basically via Internet.

ASSESSING PREVIOUS AND EXISTING WORK

Before starting the foresight exercise I plan to review different sorts of works that have been carried out previously. The following list contains the main works and materials to be used to gather useful information and support the foresight composing:

- Previously composed general scenarios about Estonian social-economic development perspectives by the year 2010 (composed by the Estonian Institution of Future Studies). The idea is to filter in the foresight the results from these scenarios.
- Analysis of development potentials of Estonian 12 functional urban regions, the study has been carried out in 2002 by a Finnish expert on urban geography (Jussi Jauhiainen).
- Some studies about regional demographic changes and latest trends in Estonia. Basically composed by scientists and students of the University of Tartu. These studies could be used for making trend extrapolations.
- Estonian regional development strategy 2005-2015, where a short analyses about past trends in regional development areas has given. The Strategy tried to predict also some future changes by extrapolating past trends and to give also some intuitive qualitative estimation about possible future changes on areas of service availability, business activity and population.
- Main medium- and long-term development strategies on relevant policy areas (enterprise policy, social policy, education and research policy, Innovation policy, etc.), documents are available from the relevant ministries or via Internet.
- Other works and studies (incl. these that will be suggested by members of foresight team and participants to use as an input for the foresight exercise).
- Previous quantitative data (from Estonian Board of Official Statistics and from other relevant institutions).
- Theoretical works about foresight methodologies.

At first phase of the foresight process, previous and existing works can provide essential information about the possibilities to use different approaches for the foresight, give information about historical developments in relevant areas, clarifying the ideas and fields of interest for further work and this information is also necessary to inform the participants in foresight process.

There is also a need to relate the foresight to existing policies and its implementation programs. The focus of the foresight coincides basically to enterprise policy, social policy, education and research policy, Innovation policy. Due to that it is important that foresight would take into consideration also the trends in these policy areas and the especially the longer-term objectives of these relevant policy areas. These circumstances should be taken into consideration in building scenarios about spatial settlement proportions and conditions for social-economic development in different area types. Positioning longer term objectives and developing the polycentric development conception and implementation program as a regional policy tool should be also related with these political directions and major longer-term objectives of the other abovementioned policy areas.

MAPPING AVAILABLE RESOURCES

The main resources that are needed to carry out the foresight exercise are:

- * Financial resources (foresight “will be” covered with finances by program of EU technical aid assistance and the Ministry of the Internal (national budget) as the main client and national sponsor to the foresight).

* Human resources and skills – experts and representatives from different fields and competency areas, including participants and assistants. Team, managing foresight team, should consist of 6+1 working groups (each expert work-group per each specific theme area (named in chapter 5) and a lead-group that is responsible for project management and composing the final scenarios and polycentric development conception/implementation program by using the inputs of each thematic work-group). Each thematic group should consist of 6-8 members and lead-group should consist of 10 members. Besides the foresight team also different participants “will be” involved to foresight process.

There is also a need for institution that carries out the strategic impact assessment to foresight exercise (*ex-post* evaluation). Respective executor will be found by public procurement.

* Technical and material resources – incl. office, IT equipment, office equipment, other technical equipments needed for organizing seminars, work-panels and public presentations. Most of technical resources “will be” rented.

The total duration of the foresight exercise “will extend” 24 month. The time-frame is divided into 3 phases – building trend scenarios, composing strategic conception of polycentral development and working out its implementation program. Eight months has been planned per each phase.

BUILDING SUPPORT

It is apparent that the foresight project needs some wider support than only by the members of foresight team through their active participation in the process. Foresight needs as well political support by political parties, relevant ministries, central and local governments to be sure, that the final outputs of the foresight will be used achieve its expectations in the reality and it will be put in practice. Foresight needs also financial support to manage the process at all. Beside these issues there should be also wider moral support by publicity and society, it is important that wider publicity and relevant groups of stakeholders would be actively involved in foresight composing process to receive constructive critics and feedback from them in accordance to the overall principles of democracy. It enables to obtain a wider societal compromise and accommodation in the form of the final foresight.

To get this support, it is consequential to make wider lobby for the foresight and organize public presentation and seminars during the whole extend of the project (also politicians, representatives from ministries, regional and local municipalities “will be” invited to the presentation). It is important to build up a strong communication process for this purpose.

BUILDING A TEAM

For the foresight exercise different disciplines and skills have to be mobilized and made to work together. Foresight team consists of the foresight lead-group and six thematic groups, each of them is involved with a specific thematic area (demography, economic development, social issues, culture, education/research and political power) in process of scenario building and developing the polycentric development conception and implementation program as a regional policy tool.

For the foresight exercise different disciplines and skills have to be mobilized and made to work together. Each group has to be covered with expert knowledge on relevant thematic area and skills on foresight methods. That is why experts from relevant ministries, and scientific and research institutions “will be” involved as members to each thematic work group. Leaders of thematic work groups should have experiences on methods on foresight or strategic planning and they also should have qualities demanded to a leader. It is recommendable, that experts from any other field and a person who has stronger qualities of creativity (visionary, journalist etc) would be also involved to each thematic group to provide various and often surprisingly excellent thoughts and ideas.

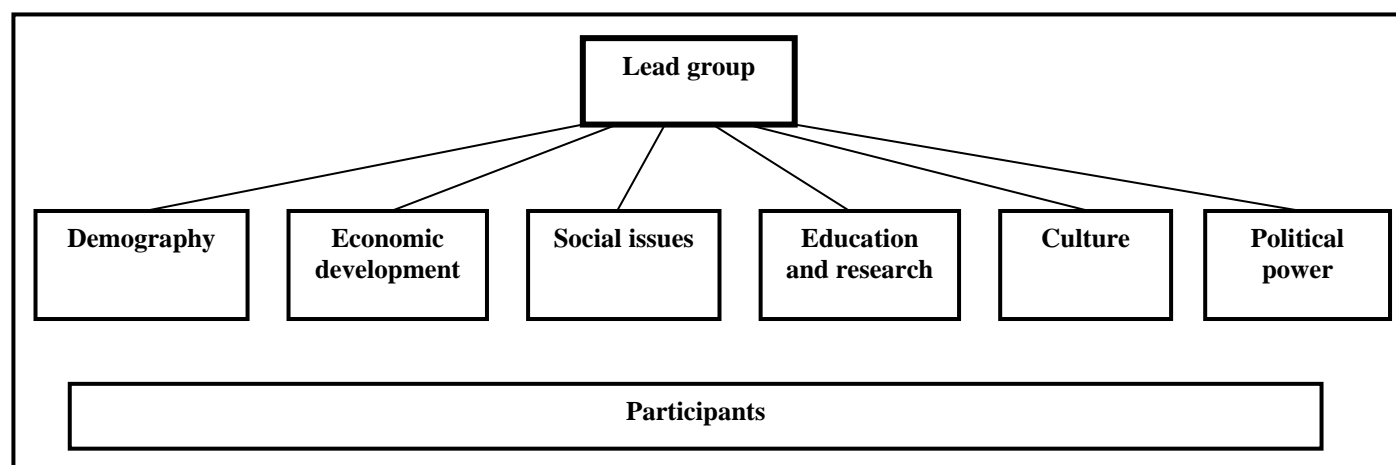
Leading group of the project should consist of:

- expert who has know-how and experiences on methods of foresight or future-studies and has previous experiences on project leading (leader of the foresight project), project leader is also responsible for the organization of foresight process;
- assistant who is responsible for organizing different workshops and assists project leader;
- participants from each thematic work groups;
- communication specialist (PR) who is responsible for managing the communication process and mediates information between foresight team, participants and publicity, making lobby and communes with public press;
- experts on regional policy and development, demography, urban policy and some other policy areas (from Ministry of the Internal and University or research institution);

- representative of county and local governments;
- person who has stronger qualities of creativity (visionary, journalist, writer etc);
- book-keeper.

The lead-group is responsible for organizing the whole process of the foresight exercise and one of its main duties is to prepare the complete foresight document integrating the results and outputs of each thematic work-groups.

Scheme: Foresight team and organization



IDENTIFYING AND SELECTING PARTICIPANTS

Majority of participants will be involved from non-governmental organizations, entrepreneur organizations, Estonian Town Association, The Association of Rural Municipalities and other groups of stakeholders and people from different “soft” sciences as backgrounds. The main idea of involving them is to get benefit from their feedback and proposals for foresight exercise and expectations that different and interesting views and ideas would be presented for foresight process.

Project team defines the most important participants, who will be also invited to participate in selected work-shops, these participants should have in-depth knowledge about topics that work-shops is being held. The other circle of participants will be invited formally to contribute via Internet (also participants who express their interest in giving their feedback and proposals by their own initiative). General knowledge on relevant themes and topics is a requirement to these participants.

Participants are planned to be involved in four steps:

1. after finishing the draft about development trends and scenarios;
2. after finishing the draft version of polycentral development conception;
3. after finishing the draft version of action plan (implementation program);
4. after finishing the final draft of the foresight exercise (before its final approval).

PLANNING COMMUNICATION

Main parties who are involved in communication process are members of project team (lead-group and thematic work-groups) and participants. The communication process of the foresight is organized internally via e-post and the meetings between foresight thematic work-groups and leading group. The external communication process is organized mainly via different formats of workshops, e-post, Internet and public press. There is a special communication specialist, who is responsible for arranging external information flow and organizing public debate. Communication specialist is at the same time the main contact person of the foresight project for different participants. Draft versions of foresight exercise are periodically opened to participants for proposing comments via Internet home page and participants are informed of the openness via e-mail. The internet site would be not actively promoted to the wider publicity, because otherwise the extension of the information flow could be not manageable and the glut of useless information could occur.

Project 3: Sustainable Territorial Development of the Rural Areas of Hungary

RATIONALES AND OBJECTIVES

Over the next two decades the rural areas of Hungary will be radically transformed in terms of demography and the use of land as limited natural resource. Most rural regions will face significant challenges linked to the management of structural changes to the system of agricultural production and to the diversification of regional economy. These changes will have far reaching implications for the development of spatial strategies as well as for the provision of a knowledge infrastructure.

In addition to the above, the administrative structure of the country is basically changing: the thousand year old county system is currently reorganised into seven regions.

Focus: to support the sustainable development of the regions in *economic, social and environmental* terms. How? By focussing to the utilisation of hidden reserves in *multifunctionality*.

The immediate objective of the study is to assist

- regional authorities and other bodies, farming organisations, chambers of commerce, labour unions and citizen groups,
- central government and
- agencies acting on their behalf
- in harmonizing the national and regional priorities

in the development of spatial strategies and in the synchronisation of interventions at regional level.

Additional objectives are:

- Build capacity at institution level in the seven newly created regions to handle public affairs;
- Introduction of independent, original thinking instead of obeying to higher authorities;
- Initiating further foresight projects on regional level focussing on the implementation of the recommendations of the present project.
- Strengthen interaction, communication and cooperation between all relevant stakeholders of the innovation systems at the regional level;
- Disseminate foresight culture and methods.

OUTCOMES

The principal outcome of the project will be:

- (a) a common vision of the possible future of the rural districts of Hungary ;
- (b) development of the regions through the improvement of the participation of local (human and financial) resources;
- (c) a road-mapping, indicating how to strengthen the newly born regions using domestic and EC funds;
- (d) better appreciation (and utilisation) of historical monuments and local cultural heritage.

The main output will be a foresight study for the territorial development of the regions of Hungary .

TIME HORIZON

The time horizon for the Foresight study will be 5-20 years. (5 years for ICT projects, 20 years concerning landscape, environmental issues)

Time Horizon for the project: 15 months

PARTICIPATION

Participating Organisations: Prime Ministers' Office, Regional Councils, Regional Development Agencies, Regional Research Center of the Hungarian Academy of Sciences, Municipalities of Counties.

USERS

Expected Target Users:

Expected beneficiaries will be first at all the smallholders and communities of the regions. Moreover the project will benefit the Government and the new municipalities of the seven regions plus the local economies and industry.

ASSESSING PREVIOUS AND EXISTING WORK, RESOURCES

National Development Plan, Regional strategies, development plans,
Experience gained through TEP (Hungarian Foresight Programme) and the RIS projects carried out in the regions.
The Futures Project (JRC-IPTS), Blueprints for Foresight Actions in the Regions (EC-DGR-K2)

CONTEXT

Components of multifunctionality:

- a cultural activity (declining share of economic role)
- food processing in farms (complying with food safety regulations)
- food industry (based on locally produced raw materials)
- industry in the region
- traffic-transport
- landscapes with tourist amenities
- recreational activities (camping, biking, hiking, walking)
- archaeological sites
- historic monuments
- religious or other cultural places
- importance of maintaining biodiversity
- protection of natural (and built) environment

IMPLEMENTATION OF THE FORESIGHT EXERCISE

The exercise will be executed in five consecutive steps:

1. Period: Preparation

The present situation of the country will be summarised in a desk study prepared by external experts on a contractual basis. Simultaneously a study on the recommended methods will also be prepared. The author will perform a stand-by methodological service during the whole duration of the project.

2. Period: Panel work

Then the future *national goals and priorities* will be presented in frame of a set of national scenarios, which will be based on a SWOT analysis prepared by the task team.

3. Period: Regional work

The seven regions will prepare by their own task teams their own SWOT analyses and priorities – which may contain opposite elements

4. Period: Synthesis

Finally the synthesis (compromise) of the national and regional priorities will be elaborated by the joint staff of the task teams, completed by a two round Delphi survey on the most important 20 priorities – as statements.(2000 addressees; envisaged overall response rate 50%)

5. Period: Modification of the previous plans according to the synthesis report. (Not sponsored by the project, but monitored by the PM's Office.)

STRUCTURE/ORGANISATION OF THE PROJECT

- Steering Group: 10 persons
- Project Council: 40-50 persons (representatives of the office of the PM, ministries, regions, counties, NGOs, trade unions, farmers associations etc...).
- Project management/office: 5 persons (full time 1 leader, 2 managers, 1 administrator, 1 webmaster)

The steering group will have monthly meetings during the whole project period. Their salary (if any) will be determined by the PM.

The thematic panels will have 10 members and will have also one meeting per month. 2 panel members will work (and be paid) full time, 8 panel members will receive a 1 m/m honorary fee for the Period 2.

Similarly the 7 regional panels will have 10 members, from which 2 will work (and be paid) full time and 8 will receive 1 m/m honorary fee during Period 3.

The synthesis report will be prepared by the synthesis panel, consisting of 22 members; 2 from each region and 2 from each panel. 2 panel members will work (and be paid) full time, the rest 20 will get a 1 month honorary fee during Period 4.

Members of the project council will receive the newsletter monthly and have the right and duty to comment its content.

The staff of the project management office will work and be paid full time during the duration of the project.

COMMUNICATION

All internal and external communication will be executed by e-mail and e-conference and in frame of workshops and panel meetings.

At the end of each Period information meetings will be organised in the 7 regions and in Budapest, where representatives of all stakeholder organisations and expected target users plus all interesting citizens (experts and laymen) may participate. Speakers will be the panel members and invited speakers.

<u>LABOUR, WORKLOADS</u>	<i>No of persons</i>	<i>Duration</i>	<i>Workload</i>
1. Period, preparation		3month	m/m
Desk study	3		3
Study of recommended methods	1		2
2. Period, panel work		6	
National goals&priorities			
HR panel (education, health)	10		20 (8x1+2x6)
IND-ECON panel	10		20
AGROFOOD panel	10		20
ENV-ENERGY panel	10		20
3. Period regional work		3	
Regional goals&priorities 7x10	70		98 7x(8+2x3)
4. Period			
Synthesis report (4x2+7x2)	22	3	26 (20+2x3)
Project management	5	15	<u>75</u>

Total: 284 m/m

BUDGET

Labour:

Travel – per diem costs:

Meeting costs:

Subcontracting costs for studies:

Costs of home-page, newsletter, publications, advertisements in newspapers, radio, TV.

Project 4: Macedonia's justice system 2020 (judiciary and law enforcement agencies)

REASONS FOR USING FORESIGHT

The forthcoming period is of possibly crucial importance for Macedonia. The integration process in the EU & NATO enters a phase where Macedonia faces quite substantive and quite many demands for reforms in different societal areas. On the other hand, Macedonia enters that phase with a serious relict of a period featured by stagnation in the development of democratic institutions and of mechanisms for promotion and protection of human rights and freedoms.

That distortion was mostly due to the partisan personnel policy continuously applied in the state administration and the judiciary, as well as in those state bodies that are in charge of controlling the Government, while the economic development and raising the standard of living of the population was put aside in spite of the fact that the impoverishment rate grew to alarming extent.

One of the weakest links in the development of democracy according to domestic and external factors is still the judiciary (at all levels of its work). The high level of corruption, lack of quality, incompetence and inefficiency of the judiciary combined with great political influence to which the judiciary is exposed on daily basis, have an immediate impact on the protection of human rights through the system institutions. The lack of genuine control mechanisms (partisan policy at the Supreme court State Judicial Council and the Constitutional Court) result in mistrust in the justice system on the part of citizens and in complete lack of protection of the rights (especially of specific vulnerable groups, such the underprivileged, the elderly, persons belonging to certain ethnic communities, specific minority groups such as sexual minorities, internally displaced persons, including however political opponents and members of opposition parties as well). The lack of appropriate action of the public prosecutor office and of courts has a negative impact on the commenced reforms in the police.

This exercise should be an attempt for creation of a vision and long-term strategy that will lead to reaching adequate living condition, rule of law, independent judiciary, development of independent and effective control mechanisms of political action that are on the level of desirable objectives instead of being part of already started process.

THE DESIRABLE OUTCOMES

- Introduction and Creation of a foresight culture
- Detecting legal voids and initiating appropriate changes of the legislation;
- Influencing the global processes of democratization and reforming the society in relation to the human rights and liberties – detection of gaps and mechanisms for promotion and protection of human rights and freedoms;
- Increasing the state institutions' sensibility and knowledge of human rights violations;
- Setting links of cooperation and control mechanisms between the law enforcement agencies

TIME HORIZON

Time horizon for the exercise will be 10-15 years – the minimum real time to reach the EU requirements for membership.

Duration of the exercise is set for 24 months. Any postponing of the activity will have a negative fit back. If there is a team completely dedicated for this project and with total population of only 2 million, the project can be completely finished in two years; otherwise some of the participants may lose an interest in participation. Another problem is that exercise must be finished with in one election period because as experience in other countries has shown, the new governments usually stops all activities commenced by previous government.

UNDERSTANDING THE CONTEXT

In its work, the Helsinki Committee starts from the assumption that human rights and freedoms are constitutional category, and that the State is their basic promoter and guarantor. The basic task of the State in this domain (which arises from the Constitution and from the accepted and ratified international documents) is to create conditions for exercise of human rights and freedoms, to avoid violating human rights and freedoms through the action(s) of any of its authorities, structures, individual civil servant or elected official, and if a mistake resulting in a human right

violation occurs – to note and rectify that mistake and to annul or mitigate its consequences to the largest extent possible, i.e. to punish such violations and thus protect the human rights and freedoms.

The mandate of the Helsinki Committee includes observation and evaluation of the State's accomplishment of its duties with regard to human rights and freedoms, as well as warning the State against the omissions, mistakes or direct violations of the rights and freedoms committed by its authorities. The Helsinki Committee is carrying out these functions with the view of further development of the democratic society and the rule of law - as basic preconditions for the exercise and protection of the basic human rights and freedoms.

For quite some time, the MHC had warned on the critical situation of the Macedonian judiciary and fit back mechanisms between law enforcement agencies. Once such criticism came from the international community, the Macedonian Government reacted by preparing so called "reform". The first estimation was that most of it is cosmetics. Under the reforms, during the last years, the rule of law was not transformed into a principle which determines the work of the legislative, executive and judicial authorities and the life in the country was under the absolute influence of political parties, currently in power. All of that contributes to the widening of the gap between Macedonia and the developed Western democratic states as well as the states that are currently developing their democratic systems, which, from a comparative point of view, makes Macedonia regressing in the implementation of the international standards in the area of human rights and freedoms.

The MHC is among the few, if not the leading NGO that could offer expert comparative view relating to the previous and the practice that is going to be developed based on those changes.

Under condition when there are:

- clear recommendations on the necessary action concerning respect and protection of the human rights (EU recommendations concerning Macedonia's application for EU membership), and
- documented disregard and violations of the human rights by the State and its bodies,

It is most than obvious that a serious approach should be implemented in order to obtain the desired EU membership.

The government and especially the secretariat for the Euro integration should be the initiator and sponsor of this exercise.

TARGET USERS

There are different categories of users:

- People on the territory of Macedonia (citizens, stateless and foreigners) to full enjoyment of their rights and freedoms
- Marginalized and vulnerable groups (women, disabled people, persons discriminated on the grounds of sexual orientation/status/religion, political party affiliation, drug users, poor, etc.) by improvement of their access to justice
- The target groups for the illuminational component of the project are relevant state bodies, the police, lawyers, and the judiciary
- The target group for the policy making are the MP's and members of the government
- Students as inheritance
- Business sector

INPUTS

As a preparation for the national exercise following material should be analyzed:

- The EU recommendations (available at the web page of the gov)
- current programs and projects of the government (internet)
- Courts reports (available upon written request)
- Ombudsman reports (internet)
- Special reports of different ministries (internet and upon written request)
- European court for Human rights – for no. and type of cases against Macedonia
- Relevant statistics from the State statistical organization
- Reports from the HR organizations in Macedonia that provide legal assistance on different levels and for different target groups (for the last 5 years)

- Special Reports from the International organizations for Macedonia and their reports for the projects that they have supported during the past years. (for the last 5 years)

RESOURCES:

Financial resources and administration should be a government obligation.

As administrative support the government can use the trained personnel from the NGO sector. During the past 4-5 years as part from different projects, many of the NGO members has passed the project management trainings, development of strategy, training of trainers etc. A contrary to that, due to the constant changes of the administrative support in the public administration (depending of the political affiliation) identifying the skilled, open-minded personnel would be an existing process.

Macedonia have only 2 millions inheritance and there is a great possibilities that some of the experts that would be invited in the letter stage to participate in the working groups or in the management team are creators of the current programmes and policies and “god fathers” of the current reforms.

FRAMEWORK

As a framework, the following groups should be established:

- Project manager or coordinator and the team (to plan the process, identify participants, manage sub-projects etc)
- Research team (for preparation of the comparative study or summary of the materials)
- Steering committee (policy makers, experts, professors)
- Experts working group (they will for ex. Lead the panel discussions or advise on the EU policy)
- Administration
- Finance manager and assistants who will help organization of events etc.

BUILDING SUPPORT

From the very beginning a clear link between the outcomes of the exercise and the EU membership should be established and to use the influence of the EU representative and the international community to promote and impose the idea. The second crucial moment is the forthcoming parliamentary elections and new government eager to set new standards on our way to Europe. It will take serious efforts to attract influenced politicians in this exercise.

Having in mind that the outcomes of the exercise will affect functioning of the juridical system, support must be obtained from influential lawyers, judges, representatives of the law enforcement agencies.

Parallel with that, a set of well digested information, data, best practices should be communicated to the media, who can use copy-paste technique to spread the idea, importance and the impact of the exercise.

Due to a very weak industrial development of the country it will be very difficult to attract the business sector and will require diplomatic skills to make idea acceptable and worth trying.

As the members of the NGO sector are carriers of the new ideas and approaches and they have influence on the public life, support and participation from this sector will be assured by inclusion of the NGO members from the very beginning of the process. Many of the non-politically active experts are members of different NGO's and their experience and expertise can be used, too.

BUILDING A TEAM

Building an efficient, open-minded and independent team is crucial for successful commence and realization of the exercise. The Government should assign at least one working segment of the authorities bodies as a focal point i.e. office that will Manage the project. The Project leader will nominate members of the executive team (researchers, administrators, assistants) and will be responsible for establishment of links of communication between steering committee and the main office; public presentation of the project and establishment of links with other resource persons (experts, panellists, etc).

The Steering Committee consisting of Judges, Academicians, MPs and experts (from the NGO and Business sector) will be responsible for selection of topics for panels and setting criteria for selection of participants.

METHODOLOGY

Steering Committee by using SWOT analysis will select the topic for the panels.

Depending of the topic, the chairman of the panel, together with the dedicated assistant from the Office, will select and invite participants to the panel.

Results from all panels will be discussed i.e. cross impact analysis should be perform after finalization of the thematic panel.

Based on the results of the cross impact analysis, the groups will create 2-3 scenarios.

Scenarios will be presented at the national conference and the feedback information will be use roadmapping.

The Steering Committee will be responsible for formulation of the policy recommendations, elaboration of the final report and dissemination to the policy makers and the wider public.

Project 5: Regional Foresight in Trencin Region, Slovakia

GETTING PREPARED FOR FORESIGHT

The Trencin region is under a process of economic and social transformation since 1990. The main milestone of this transformation was the establishment a new self-governing public authority covering the region of Trencin. The new borders of the region – county are copying not only historical territory, but they are also creating a natural economic unit capable to develop itself into a prosperous region within the Slovak Republic and European Union.



The main industries - machinery, textile and chemistry (especially rubber industry) of the region went through deep structural reforms. The largest state owned companies were privatised, decreased in size and a lot of new spin-offs, mainly SME's were established. The statistical figures show that besides the above traditional sectors there are new businesses from other sectors established in the region. Mostly SMEs focused on ICT, electronics, and services for industrial enterprises.

The regional foresight exercise that is being prepared plays a key role in shaping a comprehensive regional innovation strategy that is missing in spite of the preparation of regional development plans. During the previous years some innovation tools were established, e.g. business and innovation centre, regional advisory and information centres, but they are acting locally, they are isolated, not benefiting from a synergic approach within a regional network, which is joined by common regional policy.

TANGIBLE OUTCOMES OF FORESIGHT EXERCISE

1. Introductory foresight workshop: The aim is to inform about foresight methodology, its results and about foresight projects undertaken in EU. Representatives of key foresight players in the region, stakeholders, regional bodies and public shall participate.
2. Draft document: Study on regional foresight
3. Web site for two groups:
 - participants: to Exchange their points of view as a tool of networking
 - users: to be informed about foresight and about outcomes of the exercise and way how they can use it
4. Leaflets informing about exercise
5. Sectoral analyses: It is important to analyse the current state and trends in sectors of Trencin region and to identify which ones are the most perspective
6. Policy recommendations: as this exercise is the input for regional innovation strategy, it should define technology and innovation priorities
7. Path to the expected vision as a tool for the process of regional programming
8. Workshops and conferences to exchange information between panels and stakeholders and to currently inform about results

INTANGIBLE OUTCOMES OF FORESIGHT EXERCISE

1. Establishment of panels
2. Public discussion on priorities, paths, trends, barriers and opportunities
3. Formal and informal networking between universities, R&D organisations, enterprises, SMEs, hi-tech companies, educational establishments and financial institutions
4. Development of foresight culture in Trenčín region
5. Awareness of public, SMEs, local regional public bodies about foresight method
6. Integration of foresight results into the regional innovation strategy, regional policy programmes and programs of regional organizations as well as companies.
7. Innovation and technology priorities defined on the basis of sectoral analyses

FOCUS AND OBJECTIVES

The territorial focus of the foresight exercise is Trenčín region. It does not focus on one sector of economy but has a wider scope of interest – innovation development. It deals not only with technological innovation but also with innovation in the means of society and processes.

This foresight exercise will be undertaken to define priorities and ways that ensure strategic development of regional innovation system accepted by regional consensus. The foresight study helps raise awareness about foresight in the region as today's level of "foresight know-how" in Slovak regions is very poor. The main objective of the foresight exercise is to define strategic priorities in technology development and innovation relevant to Trenčín region and to define the path to the expected vision.

Secondary and indirect objectives are utilizing Trenčín region's resources to foster economic development of the region and improving its capability to absorb efficiently EU funding for further and sustainable development.

TIME HORIZON

Time horizon of the regional foresight is year 2020.
Duration of the exercise is 2 years.

UNDERSTANDING THE CONTEXT

Slovakia went over substantial decentralization of public administration in late 1990s. Eight NUTS III regions and four NUTS II regions were created. On the level of NUTS III self-governing bodies were established with decentralized fiscal competencies. They are represented by regional parliaments responsible for regional programming. The first National Development Plan encompassed programming period 2004-2006 and included four operation programmes. On the regional level several analyses have been made but in the time horizon of maximum 5 years. As to the Trenčín region, the Programme of Social and Economic Development has been worked out in 2003 with short term objectives that should be reached in 2006. The long term strategy is missing.

As to the agents which may help the exercise, they should represent regional parliament (as this is the main regional decision body ratifying programming documents), the University of Trenčín and Trenčín branch of Slovak Chamber of Commerce as a representative of local SMEs. It is important to include also members of political parties that play their roles in this region and have potential to be elected in national elections.

Members of regional parliament are crucial for this exercise as they will guarantee that results of this exercise will be incorporated into the programming documents and strategy of the region. Involvement of SMEs and research and education representatives ensures that results of the exercise will be implemented after being ratified. But it is necessary to establish effective formal and informal network as mentioned in Point 1 Intangible outcomes.

We cannot omit experts on foresight in Slovakia that have been involved in the first and only National Technology Foresight Project on Innovation so far.

The most important user of the foresight in this region is the Trenčín self-governing body as a policy maker of Trenčín region. The study on regional foresight will be used as a background document for the creation of the regional innovation strategy.

Other users are University of Trenčín, regional R&D institutes and organisations established in the region as well as industry and business associations and individual enterprises. It is important to awake that these institutions (regional bodies, universities and schools, associations and enterprises) should cooperate with each other in the future. That is why the creation of network is crucial for the phase of implementation of foresight results. The foresight exercise will define some priorities in research, innovation and trends in sectors and way how to reach

desired objective. Speaking about university, the main benefit or impact of this foresight shall be reappraisal of fields of study with study plans and their adaptation to the future needs of region (resulting from the exercise and regional innovation strategy). Future collaboration of university and regional R&D institutes is anticipated. Enterprises and associations cannot be excluded from this future network. One of the possible results of this exercise might be that schemes and grants shall be provided by region for development of perspective sectors and on the contrary, answers on the problem of restraining/restructuring inefficient manufactures (f.e. textile or mining industry) should be provided. The overall result of this process is increase of competitiveness of the region on the basis of innovation and knowledge.

As to the sponsor of the exercise, it is the European Commission as a provider of majority of financial resources through 6th Framework Programme (it sponsors the overall Regional Innovation Strategy of Trencin region that is going to be shaped through the use of foresight method. The rest of financial resources is provided by public and private organizations implementing the RIS project).

INPUTS

Before starting the foresight exercise we have to review several documents like the above mentioned Programme of Social and Economic Development of Trencin self-governing region. Within this document analyses of industry, society and environment have been made. SWOT analyses of sectors are also included and it will be helpful in defining strategic sectors. As the analyses of Trencin region has been made recently, it is not necessary to do it again. SWOT analyses of innovation capacities of the region will be made on the beginning of the exercise. Inputs to SWOT analyses will be provided by tailored questionnaire for SMEs to find out their innovation capabilities and barriers of innovation.

The second material with regional focus is the Raw Material Policy of Trencin region worked out in 2005. This can be useful for analysing primary industrial sector with focus on transformation to renewable resources industry. Priorities in innovation have been defined also on national level. Relevant documents are National Strategic Framework for years 2007-2013, Strategy of Competitiveness of Slovakia, Sectoral Operational Programmes, State of SMEs in Slovakia and more (f.e. 7th Framework Programme). All of these materials provide relevant information for the exercise. Experiences and results from the National Technology Foresight Project on Innovation executed for the whole Slovak Republic on behalf of Ministry of Education will be transferred. The foresight exercise will exploit also the results from previous regional foresight exercises from abroad. These materials are available on internet. All of them outlined priorities in innovation on the national level. Up till now no regional innovation strategy has been done in Slovakia. This foresight exercise will have to derive from priorities sketched on national level but at the same time define regional priorities in longer time period.

As no regional foresight has been undertaken up till now in Slovakia, the experiences have to be drawn from foreign foresights (German project partner has experience on regional foresight).

RESOURCES

The exercise will take 2 years (12 person-months). The total costs of the exercise should not exceed 250.000 EUR. Money will be provided by European Commission within the RIS project with co-funding of 25% from project partners (University of Trencin, Trencin branch of Slovak Chamber of Commerce, Trencin Regional Development Agency, BIC Group, Instituto Tecnologico de Aragón and ZENIT GmbH).

SETTING-UP A FORESIGHT EXERCISE

Foresight as a tool is not well known in Slovakia. For this reason it is needed to raise awareness of external environment as well as of the team members as not all of them are experts on foresight (except leading organization). External environment includes representatives of Trencin self-governing region, stakeholders, panel members and public (representatives of political parties, industry, research, enterprises, regional associations, non governmental organization). All of them should get basic information on what foresight is.

Ways of informing external environment: workshop, leaflets, special web site and web site of the University of Trencin and Trencin self-governing body, media. Promotion of the exercise is mentioned in more details below.

Support shall be obtained from most important political parties in the regional parliament as this is crucial for the implementation of results of the regional foresight. On the national level the Ministry of Economy and Slovak Academy of Sciences are relevant institutions to be dealing with foresight. Ministry of Education is responsible for research and that is why it also should be included into the process of foresight (through politicians).

It is important to create strong network and “foresight thinking” as was mentioned above. This could mean creating links between Ministry of Education and University of Trenčín to develop foresight teaching on the university and stimulate other foresight projects in this region.

The regional foresight exercise will be undertaken by the foresight project team from the leading institution together with three types of panels. The project team will consist of three people from the RIS project partners, one of them will act as the overall coordinator of the exercise. The rest of the team should have practical experience with foresight and will participate on trainings, design of the exercise and financial issues.

The team will be assisted by:

- Coordinators of panels. These will work closely with the project team and will be responsible for selecting panel members. They should have skills and qualifications as mentioned below. They start working immediately from the beginning.
- IT experts for electronic tools of communication (external). Website should be prepared when the first workshop is organized where first information about exercise will be disseminated.
- Panels consisting of experts on innovation systems, technology transfer, regional development, R&D and enterprises. They start their work after designing foresight exercise and selecting suitable members.

Steering committee will work on the overall level of the RIS project.

Three panels will be established:

1. Work Panel – comprising of authorities from the whole Slovak Republic that have good knowledge and experience from the field of innovation systems, technology transfer, R&D in enterprises. Number of participants: 6 – 8. This will be „author“ panel responsible for reviewing analyses, proposing foresight methods and priorities.
2. Panel of Reference – comprising of the best Slovak experts on innovation systems, R&D and innovation in enterprises. Number of participants will not be higher than 6. Role of the panel will be taking into consideration national and international aspects of innovation development. They will be responsible for the evaluation of documents and their revision.
3. Expert panel – comprising of 100 – 150 experts from Trenčín region. They are going to be questioned through tailored questionnaires on the regional innovation system. Experts will be representatives of several sectors (industry, research, education, public bodies etc.) and stakeholders.

Participants will be selected on the basis of experience. The major players in the Trenčín region (universities, associations, enterprises..) will be asked to delegate candidates for panel membership. Politicians will be selected according to their importance for the region (some political parties have more electors in the region than others).

Panels will be created after organizing a workshop for external environment.

As to skills and qualifications of participants, team work is very important. These people should be able to think long term (which is difficult for politicians) and be creative. They also should be experts in their fields – innovation, sector development, research, education system, social system.

Engagement of participants is the key point of successful exercise. Several of above mentioned (University of Trenčín, experts, Trenčín branch of Slovak Chamber of Commerce) were involved in preparation of RIS project proposal. For representatives of political parties being seen is always good motivation. The weak point of having politicians involved is four-year election period in contrast to a long term scope of the exercise. R&D institutions can be motivated by getting input for their work (analyses, priorities). Designing regional innovation strategy through foresight method among the first in Slovakia can be good motivation and a challenge for the experts. As Slovakia has not undertaken a regional foresight yet, some travels to foreign partner regions (German) can be undertaken to gain experience.

To engage participants/stakeholders in the exercise the marketing/promotion strategy is needed. It will include:

- establishing a web site (as mentioned in Point 1 Tangible outcomes) as a marketing tool
- conferences and “grand events” (f.e. banquets) can be organized
- web site forum to discuss online
- presentation of exercise in regional and national media (newspapers, TV, radio)
- trainings as awareness in one of the outcomes

Other marketing tools that can be used:

- web sites of the Trenčín self-governing region and University of Trenčín informing about foresight and this exercise
- media (regional and national TV, newspapers, radio)

- leaflets distributed on university, seminars where stakeholders are participating, partner organizations on their events
- academic publications where results of the exercise are published
- workshops with discussions about future shape of the region

Communication will be organized as following: regular panel meetings will be organized to discuss current issues of the work. The means of communication will be e-mailing and/or web site forum where participants may register themselves. This web site will be also a marketing tool where information about foresight and this exercise will be available for wide public.

Communication has to be assured on several levels:

- Each panel will have its leader to facilitate communication among panels and leading team. Regular meetings of the panel leaders and project team have to be organized.
- Communication between panels and stakeholders: conferences and workshops will be organized. Regular meetings will also be useful. Attracting media is important to attract public attention (by inviting significant people from social, political or scientific life).
- Communication within panels: Regular meetings should be organized with attendance of a member of the leading team.

For all three types of communication a web site of the project will be used and forums will be created.

At the end of the regional foresight exercise a public conference will be organized as the final step of the discussions. The aim is to inform, get a feedback and regional consensus on a vision for the region development and development priorities. This feedback from the public will be incorporated into the Study. Results from the foresight exercise will be used as a basis for the regional innovation strategy development.

Speaking about the methods of the exercise, the first step that has to be taken is the analyses of the current state of Trenčín region. As was mentioned above, several analyses of Trenčín region and its sectors' development have already been done. As they have been undertaken by the self-governing region, we can take them as a reliable source of current information. Within these analyses also a SWOT analysis has been done. It provides general overview of strengths, weaknesses, opportunities and threats for the Trenčín region. As we are trying to define innovation priorities within this exercise, we will need some more detailed information on state of innovation in this region that can be provided by enterprises, university and research institutes. These data will be gathered by tailored questionnaire. This on-line questionnaire will be promoted on the first information workshop to inform stakeholders about this activity. Company/subject may fill in this form anonymously but specifying the basic data about company/subject (sector, number of employees, turnover etc.). When doing a survey it is always important to provide some incentives to respondents as otherwise there is very low level of participation and results of survey are distorted. In this case promotion will be crucial starting with the first information workshop and continuing in regional media and on regional seminars and events. The aim of this promotion should be engagement of local subjects by creation of local patriotism and responsibility for future development of the Trenčín region. Engagement of local authorities in this campaign will be necessary. Results from this questionnaire will be incorporated into existing SWOT analyses of the region. At the same time an online forum will be established to exchange opinions of large scope of stakeholders (expert panel). Regular meetings (workshops) will be organized to exchange these views publicly and to sketch innovation priorities and direction of the region in following 15 years. The work panel together with the panel of reference will be responsible for evaluation of questionnaires, SWOT analyses and brainstorming done on workshops. Work panel then defines development priorities and long-term objectives of the region (crucial sectors and issues).

The second step is a creation of a prognosis. Method of scenario building will be used at this stage. With scenarios we will try to ask how specific futures can be achieved. Creation of three scenarios is preferable – negative, most probable and successful. However the number and type of scenarios will be up to the work panel of experts. The most important stakeholders from the expert panel together with experts from the panel of reference and work panel will be requested to consider what the strategic options might be for the specific scenario to be achieved. This can be done on workshops together with a web forum.

The third phase – prescription blends together closely with the second phase as the desired scenario will be chosen on workshop by experts. This scenario provides a step by step road to desired goal designed by the work panel.

Project 6: The Romanian Technical Universities in 2017

RATIONALES, OBJECTIVES AND OUTCOMES OF THE PROJECT

Starting from 1990s, together with the change of the Romanian political regime, the number of the students in the technical universities has decreased year after year. This is mainly the results of the economic negative growth in Romania. Many factories have been closed thus the desire to make a career in industry has diminished. If before that period of time the number of the candidates was 18 per place in the technical university, in 1993, they were 1.5 per place. The only solution the technical universities could find was to lower the expectations regarding the candidates. Thus the level of competitiveness for these universities is not the same. The education offer does not meet the economic demand.

Now, there are 23 technical universities. The biggest one is the “Politehnica” University of Bucharest with about 20.000 students per year, 13 departments but with only 2 competitive departments. After the implementation of the Bologna Process and the recognition of Romania as an EU member the technical universities must survive on the market place, face challenges coming from the new tendencies in technologic development and innovation.

This project must answer a recurrent question: How should the “ideal” technical university look like? What must be done in the following years in order to reach that goal?

Several answers will be obtained using the foresight process which will help us to solve the present doubts with the future outcomes. In other words to identify plausible hypothesis about change proposing the alternatives for the future of the technical universities, to give adequate strategic orientations.

The first objective of this project is to identify the proper specializations (main domains of interest for the medium and long time span) from the technical universities, which need to be supported and for which we want to apply the results of this foresight exercise. This involves that we should recognize the sectors in which the technical universities have competitive advantages today or will have in the next years. This objective will be fulfilled through a large consultation of a great number of specialists both from Higher Education and Research Technical System and from the management area as well as the administration, the funding and capitalization of the education and research. Another objective is to build the institutional capacity (efficient management) for these universities.

The main outcome of the project will be a common vision for competitive universities and pathways towards bridging the gap between the economic environment and technical universities, thus improving cooperation between academia and the industrial sector.

TIME HORIZON

- Time frame of the project: 12 months; it starts together with the university year 2006/2007;
- Time horizon for the foresight study will be 5-10 years (the time horizon of this exercise must be beyond the horizon for a planning cycle - 5 years);

DETERMINING THE USERS

This project will have 2 types of the beneficiaries:

- At institutional level: the technical universities, the Ministry of Education and Research - Higher Education Division, industry through employers as consumers of the technical higher education);
- At individual level: the university professors from technical universities, the future students.

ASSESSING PREVIOUS AND EXISTING WORK

- Experience gained from “ Foresight process to the Elaboration of RDI Strategy and the National RDI Framework Program”;
- Studies regarding the evolution in the number of students in Romania as well as the number of the potential students for technical universities;
- Studies regarding the level of employment among graduates of the technical university and the way in which these universities covered the market needs.

MAPPING AVAILABLE RESOURCES

- Human resources are grouped as following:

The Executive Agency for Higher Education and Research Funding (UEFISCSU) will be the coordinator of this project.

- Executive management team- responsible for the implementation of the project- It will be involved the persons who have professional experience competence on project management, research, and the people involved in the first ever national foresight exercise for RDI System (2006);
 - Steering Committee – represents the highest decisional body regarding the project coordination – 5 members;
 - Scientific Committee consisting of 40 members from Governmental institution, industrial organizations and all Romanian technical universities
 - Panel core groups – appointed by the Steering Committee (each member of the Steering Committee will nominate 3-5 experts);for each type of department of the “ideal” technical university will be created one panel;
 - Sub-panels – each member of the Panel core group will co-nominate other 8-10 experts; for each field within departments will be created one sub-panel.
- Financial Resources: € 150.000 – the sponsor will be all technical universities and the Ministry of Education and Research. (60% - Ministry of Education and Research and 40% - technical universities).

CONTEXT / POLITICAL SUPPORT

Te Romanian technical universities want to be competitive on the European educational market. Thus, their support is unconditioned, all the 23 technical universities are actively involved. Being a project partially funded by the Ministry of Education and Research, we have political support as well. The support of society and the industry are also crucial.

The ownership is the key for a successful implementation of the outcomes of the process. This is why both society and political actors will have an active role during the development of the project.

COMMUNICATION

The communication strategy will be designed within a workshop with Public Relation experts. There will be created a short list with the principle actors who will receive the partial results of the exercise from whom a feedback is expected. The managerial team must establish and maintain a strong cooperation (based on efficient and permanent communication) among steering committee, scientific committee, panel core group and sub-panels.

Dissemination methods used: webpage, articles, present the results in different symposiums of policy makers, organize and participate in conferences.

DESIGNING THE METHODOLOGY

UEFISCSU will analyze Foresight program of other countries including Romania. Apart from the project “Elaboration of National RDI Strategy within the Framework of the National Foresight Exercise”, Romania has experience in two other different exercises. One of them regards the development of the Information Society in Romania; the Delphi Survey was used with this occasion. The other one regards Romania’s participation in an international project funded by the European Commission (ForTech). Thus, it was taken the decision to use a mixture of methods: Delphi, panels and scenarios. As participatory method the Delphi procedure is chosen to ensure that all professors and researchers from the technical universities are present in the survey.

Implementation of this foresight exercise will go through three stages and the following steps:

- I. Preparing the foresight process
 - Identifying investigated thematic areas in the technical field – aimed at a more efficient and systematic collection of information regarding possible change, defined as a set of priorities for action in each of thematic area;
 - Identification of experts will be done through a process of successive nomination. The core group of experts will be nominated by the members of the consortium;
 - Identification of the Key actors will have two main objectives: to increase the percentage of experts involved in consultation stages and to identify ways in which stakeholders can be reached.

II. Identifying the key parameters

- Structuring the consultation- in order to analyze each investigated field, a panel will set up with the objective to determine the thematic area priorities.;
- Assessment of trends- each panel will organize a workshop, ensuring relevant degree of interaction and scientific depth. The result will be assessed and will be structured as a set of 5 to 10 possible priorities for each thematic area;
- Impact analysis- the list of priorities generated will ground the list of statements for a Delphi like survey.
- Setting-up the priorities – the survey results will be analyzed by each panel.

III. Selection of scenarios

- Developing realistic scenarios – independent experts will draw up alternative scenarios for the “ideal” technical university in Romania;
- Preferred scenarios selection is the last and the most critical step of the process. Its implementation will be achieved through a vision workshop in which members of the Steering Committee, policy makers and other guests will take part.

Project 7: Project Plan for Czech Republic

GETTING PREPARED FOR FORESIGHT

The updated National Research and Development Policy 2004 determined research priorities for the National Research Programme III (NRP III)

The Foresight exercise is expected to determine „key research areas“ within the bounds of the research policy (it means based on the above mentioned long-term research priorities). These research areas will be funded via NRP III. Panels of experts and other important persons (especially representatives of the governmental sector and potential users) will select research areas (key research areas) which are crucial to the increase of competitiveness and improvement of human resources in research using proper foresight methods. Importance of the research areas from the described points of view is necessary but not a sufficient condition for their selection for funding; the strength of the domestic research capacities in such areas is another decisive factor.

The strength of the research capacities in question is assessed using following criteria:

- a) number of researchers involved in relevant research disciplines in the Czech Republic,
- b) number of research papers in relevant research disciplines published by Czech (co-) authors in impacted research journals and their citation analysis,
- c) number of patents and/or patent application in relevant research disciplines applied by Czech (co-)inventors or applicants.

UNDERSTANDING OF THE CONTEXT

There are two major players in the Czech system of research and development administration:

- a) Ministry of Education, Youth and Sports (MEYES), which is the central body of the government administration responsible for R&D, including science policy and international co-operation in research. The Ministry regularly prepares updated National Research and Development Policy which is after its adoption by the Government implemented by National Research Programmes. These national programmes are also prepared by MEYES and their adoption by the Government is necessary before launching.
- b) Research and Development Council is the advisory body of the Government (its administrative part belongs to the Government Office) but the Council possesses also executive power. The Council is responsible for preparation of R&D budget and evaluation of research institutes. Very important duty of the Council is determination of long-term research trends.

There are also other significant institutions sharing responsibilities for definite part of the research. For instance, the Academy of Sciences of the Czech Republic carries out especially basic and targeted research in its research institutes. Ministry of Industry and Trade funds especially industrial research and development.

EXPECTED RESULT AND HOW THEY WILL BE ACHIEVED

The main result of the foresight will be determination of key research areas for the Czech republic based on above described criteria.

MEYES will prepare the NRP III using inputs from the Research and Development Council, these inputs are especially long-term research priorities determined by it. These priorities will be further subdivided into definite research areas. Those of them selected by panels of experts as essential for the socioeconomic development of the country and meeting other above mentioned criteria will be organized within the frame of NRP III into several thematic sub-programmes as “key research areas”.

The long-term research trends are following:

- a) Medicine and Ecology
- b) Energy
- c) Molecular biology
- d) Material science

- e) Competitive engineering
- f) Information society
- g) Security research

The foresight exercise will be carried out on the national level.

Coverage: all regions and all relevant sectors. Following partners in the exercise were identified – Research Council, sector ministries, and professional organisations (e.g. Association of Research Organisations, Association of Innovative Entrepreneurship, Academy of Sciences etc.).

INPUTS

The foresight exercise will exploit the results of the previous foresight exercises (related to previous National Research Programmes) as well as results of other foresight exercises (e.g. from abroad). The most important strategic documents (National Research and Development Policy, National Innovation Policy, Access to the Action Plan for Research etc.) and programme proposals (especially programmes of sectoral ministries) will also be taken as inputs for this foresight exercise. Other strategic documents and programme proposals will be used as sources of relevant information and previous relevant foresight exercises will be subject of updating and upgrading. Knowledge produced throughout the academic sector and disseminated via various scientific publications will be also used if appropriate.

MEYES empowered Technology Center of the Academy of Sciences of the Czech Republic (TC) to organise the foresight exercise. TC is an expert organization in the field of technology foresight and it guarantees the adequate professional level and high expertise of the foresight exercise.

LIKELY PARTICIPANTS

Three different groups of participants in panels (pool members) are expected:

- a) Experts in various relevant scientific disciplines. Strong interdisciplinary portfolio of scientists is desired.
- b) Public sector representatives. Experts from ministries, Research and Development Council, National Research Foundation and other relevant bodies will take part in the foresight exercise.
- c) Relevant experts from various industrial companies and other users (e.g. hospitals, charities) and representatives of professional organisations are also very important for success of the exercise.

Expected number of people: 140 experts distributed into 7 groups (corresponding to research priorities), i.e. 20 members per group.

Duration of foresight: from starting work in panels till the completion of the final report should not take more than one year.

The output of the foresight exercises will be included into the final report of TC which will be given to MEYES in order to prepare a proposal of the NRP III for its submission to the Government. Preparation of the proposal is based on the results of the final report, sometimes the results of the foresight are modified by the competent officials of MEYES in order to assure compatibility of the final report of TC with a law. Especially respecting of the act on competitiveness protection and the act on research and development support is carefully checked by MEYES.

SETTING UP A FORESIGHT EXERCISE

Political support will be given from the Ministry of Education, Youth and Sports (MEYES) which is the supreme executive body responsible for research and development in the country and the Research and Development Council which is an advisory body of the Government. Promotion of foresight will be a part of an agreement between the contractor (MEYES) and the expert organisation carrying out the foresight exercise. Apart from that, MEYES will inform on the foresight exercise in a broader political and intersectoral context on its web site.

Experts participating in panels are expected to be at least holders of a Ph.D. degree (preferably D.Sc. degree) and they should hold a senior position in a relevant research institution or university (in the case of university employees, mostly full professors will be invited into panels) and/or they should be famous in academic society because of their extraordinary scientific achievements. The expert organisation will be entitled to use so called „wild cards“ in panels: this could be a young promising but relatively unknown researcher or a layman expressing public opinion.

The expert organisation carrying out the exercise will invite individual potential members of panels directly or it will ask relevant organisations or institutions to nominate their representatives. No special evidence of qualification is required since the invited persons are either known to the expert organisation or to the nominating institution or organisation. Moreover most panellists are expected to be famous and respected among their peers. The chairmen will be appointed by the expert organisations from its staff or they will be outsourced. The chairmen (facilitators) will co-operate with their assistants who are responsible for preparation of supporting materials, literature search and organisation of meetings, conferences etc.

COMMUNICATION STRATEGY

Electronic communication between the respective chairman and relevant panel will prevail over other communication forms and questionnaires are expected to be widely used. This report will be further incorporated into the final comprehensive synthetic report comprising results of all panels. Delphi is expected to be used as an appropriate method for the exercise

Three rounds during the foresight exercise are expected, all of them will be carried out in an electronic way. Moreover several meetings of each panel's group members are expected within one year in order to clarify specific issues, remove any possible misunderstandings which may happen during electronic communication and discuss the final report prepared by TC from outputs of individual panels.

At the end of the foresight exercise there will be two conferences where results of the exercise we will be presented both to the public and to academia. Expert organisation will be responsible for organising conferences and significant presence of relevant ministerial officers is expected there. Both conferences will be organized by TC.

METHOD USED FOR THE FORESIGHT EXERCISE

The Delphi exercise will consist in three sequences:

- 1) Round 1
 - Step 1: pool members asked to identify important trends and issues concerning Czech research and development and related socioeconomic needs and to suggest relevant possible opportunities and threats
 - Step 2: facilitator consolidates the forecast into a single set of events, which must be prepared in as clear terms as possible.
- 2) Round 2
 - Step 1: pool members presented with the consolidated list of events, and asked to estimate the date by which these will occur and how important for the society these events are expected to be
 - Step 2: facilitator prepares a consolidated statistical summary of the pool's opinion, also mentioning arguments and reasons. A further questionnaire is prepared, consisting of the list of events, the pool median data and upper and lower quartile dates for each event, and the arguments.
- 3) Round 3
 - Step 1: pool members presented with the questionnaire and asked to review the arguments and to formulate a new estimate of the most important research topics (key research areas) and related data
 - Step 2: Facilitator takes the revised estimates and arguments and analyses them as in the previous round. There may be further iteration steps (round) before the exercise will be finished.

Results of the foresight compressed into the final version for MEYES by TC.

IMPACT OF THE EXERCISE

- a) Substantial part of the R&D budget,
- b) Public research institution and universities,
- c) Large private companies, SMEs,
- d) Ministries, agencies and relevant NGOs.

Project 8: Foresight on Tourism in Bulgaria

Foresight is a process of looking into the future but not in the sense of just observing what the environment will look like in a certain period of time. It is a process which involves the observer and therefore it is an active observation and study of the present with its technological, economic, scientific or social aspects and by projecting the observer's experience, creativity and outlook it aims at determining those areas and features that hold the biggest potential to bring about a positive future.

By implementing successfully a foresight exercise valuable inputs to strategy and policy planning could be provided, as well as collective strategic actions could be initiated. This is one of the advantages of foresight compared to other types of analysis - the exercise involves the observer through different methods used in the process and automatically turns him/her onto stakeholder because his/her interest and vision are tied down in to the final outcome of the exercise.

In this sense, Foresight is a process of actively building a vision for the future. It is now used in as a viable policy tool by governments, regional organizations and others for the development of policy for science and technology, and to address wider concerns that involve social aspirations.

This particular foresight exercise will focus on Bulgarian tourism.

Bulgaria is a relatively small but picturesque country that has existed for more than 13 centuries in Europe, linking East and West. Bulgaria remembers ancient civilisations and great people that wrote its turbulent history. A huge variety of natural, cultural and historical wealth is concentrated in its compact area:

BULGARIAN TOURISM: STRUCTURE, GROWTH, AND LIABILITIES

Bulgaria is a country with abundant natural, historic, and architectural resources providing a rich foundation for a variety of tourism activities. With approximately 8 million people living in 111,000 square kilometres, making Bulgaria the least densely populated country in Europe, Bulgaria boasts a diverse geography and climate that include the mountains, the sea, fields of roses, and picturesque villages, and the capital city of Sofia that offers hot mineral springs and skiing within minutes of the city centre .

Bulgaria emerged on the international tourist market in the late 1950s and early 1960s, sustaining a rapid initial growth rate and spatial expansion. In early 1970s, Bulgaria was already among the world "leaders" ranking fourteenth in top-destinations.

A country, which possesses excellent conditions for seaside vacationing in the summer and mountain vacationing all year long, is yet to become a major tourist destination.

BULGARIAN TOURISM IN THE EUROPEAN CONTEXT: POTENTIALS, ALTERNATIVES, AND PROSPECTS

Central to the future of Bulgarian tourism, as seen by the current national government, is the issue of promoting the principles of sustainable development in the sector.

Several main factors impede understanding and implementing sustainable development in Bulgaria, among which key are the limited dissemination of information and lack of country-specific interpretations of the concept on various levels of society.

Second, but not least, is the "unrealistic" nature of the idea seemed to majority of new entrepreneurs whose first and utmost business priority is to survive in this hard period of transition.

In this same context, "sustainable tourist industry" in Bulgaria is still just a good "wish" for the Bulgarian politicians striving to bring Bulgaria into the European family of nations. It is indeed a long-term goal stipulated in key Governments programs, however, with little guidance and measures of how to deliver the idea to industry and communities.

Furthermore, the 2000-2006 National Economy Development Programme emphasises also the importance of expanding policy targets towards promoting new forms of tourism such as cultural, eco-, adventure, and hunting tourism, conference tourism, and mineral and spa tourism, while improving the quality of tourism products and infrastructures supported by better marketing campaigns and new communication technologies.

Despite the intensive and positive development of Bulgaria in recent years the country disposes – faces demographical problems and lack of economical resources in the governance process of limited economic and human resources to support all areas of tourism. Trends in consumers' behaviour indicate rapid changes in reference with tourism services. Staying unfocused holds the risk of not using and managing the existing resources in the most efficient way. Flexibility, better sustainability and marketing of the tourism service are needed in order to keep constant and even growing interest in Bulgarian tourism.

Building a strategic vision for the sustainable development of tourism is crucial in order to direct and utilise the limited economic and human resource.

That is why setting up priority areas in the sector is of vital importance for the desired fast development and prosperity of the sector which will directly influence the national economy.

In the last decade, Bulgaria has witnessed several attempts of planning for tourism development. These efforts, however, remain independent from each other and stand somehow on a local level. There is a lack of established long-term relationships with the administrations of the natural territories in the regions. There are also problems that leave entrepreneurs with very small profits due to the limited scope of the industry and lack of collective marketing efforts. Unfortunately the knowledge and skills of entrepreneurs alone are insufficient to develop a competitive tourism product. In the sense of the stated above, foresight is extremely suitable tool to explore the issue.

FORESIGHT IS CHOSEN WITH THE PURPOSE TO:

- Bring together all stakeholders and overcome the fragmentation, weak communication and coordination between them;
- Help in building a network of knowledge and long-term relationships between all involved actors.
- Create a strategic vision for sustainable development of tourism in Bulgaria that defines the tourism among the key sectors of the national economy to boost competitiveness, stimulate entrepreneurship and thus improve prosperity and quality of life.
- Strengthen the foresight culture and level of comprehension among Bulgarian state, business and social institutions.

DETERMINING THE USERS (SPONSORS)

The main sponsor will be the Ministry of Economy and Energy which actually is the coordinating body of the National Tourism Authority. The other relevant ministries like Ministry of Transport, Ministry of Education and Science, Ministry of Labour and Social Policy, Ministry of Culture and Ministry of Environment and Water will also be involved in some extent. These authority bodies will be the main users of this exercise as being a major part of the national funding, controlling and policy making mechanism.

Another user of the foresight will be the business sector:

- The tourism related business - travel agencies, tour operators, hotel- and restaurant- keepers, real estate agencies etc.
- The IT sector – e-commerce, communication services, IT business support companies (all kinds of specialised software for management and services).
- Small entrepreneurs will also be encouraged to start or expand their business activities as a result of the successful exercise.

Science will also benefit from the exercise – academicians will use the results for their work in order to create more applicable research products be in use of the problems that business meets. One of the biggest users will be social and humanities scientists and researchers working in these areas.

And off course, the society in general will be the final user of a competitive and high quality tourist service.

THE OBJECTIVE OF THE EXERCISE WILL BE:

- Identifying the most promising areas of Bulgarian tourism
- The global trends show that there is a clear tendency toward shorter stays when going on holidays but in the same time there is a shift from active holidays to holidays as an experience.
- This means that unique tourism segments and products must be defined emphasising on profitability and less on volume.

- Inspire public interest and gather ideas for the national action plan. Specifying the key factors and features which, if developed could boost the process of building an attractive and distinctive image of Bulgaria as an international tourist destination.
- Determining the ways to achieve sustainable growth and quality of tourism (as a service) and thus positively influence the raise of competitiveness and prosperity of the national economy in general.

THE OUTCOMES EXPECTED BY THE END OF THE EXERCISE ARE:

- Vision for strategic development of the sector;
- Priority areas of tourism identified;
- Key factors for progress specified;
- Scenarios for possible development elaborated.
- Essential reports and recommendations formed in order to assist and guide the relevant decision and policy makers in their management activities
- Active involvement of the various stakeholders from initiation and throughout all the stages of the activity;
- A strategic vision of the desired future development of the sector;
- Establishment of networks among the agents concerned. These networks should allow the members to interact and share awareness of each other's knowledge, strategic orientations and visions of the future.

TIME HORIZON OF THE FORESIGHT WILL BE 15 YEARS.

The reason for choosing such a time horizon is the understanding that fulfilling this strategic vision for the desired future will involve infrastructural reforms or improvements; human resources capacity building; initiation of certain business and investment activities, and change in public climate towards higher entrepreneurial spirit among citizens etc. Another important argument is synchronising the action plan, scenarios and recommendations of the foresight within the next two 7-years-long planning periods of the EU structural programme.

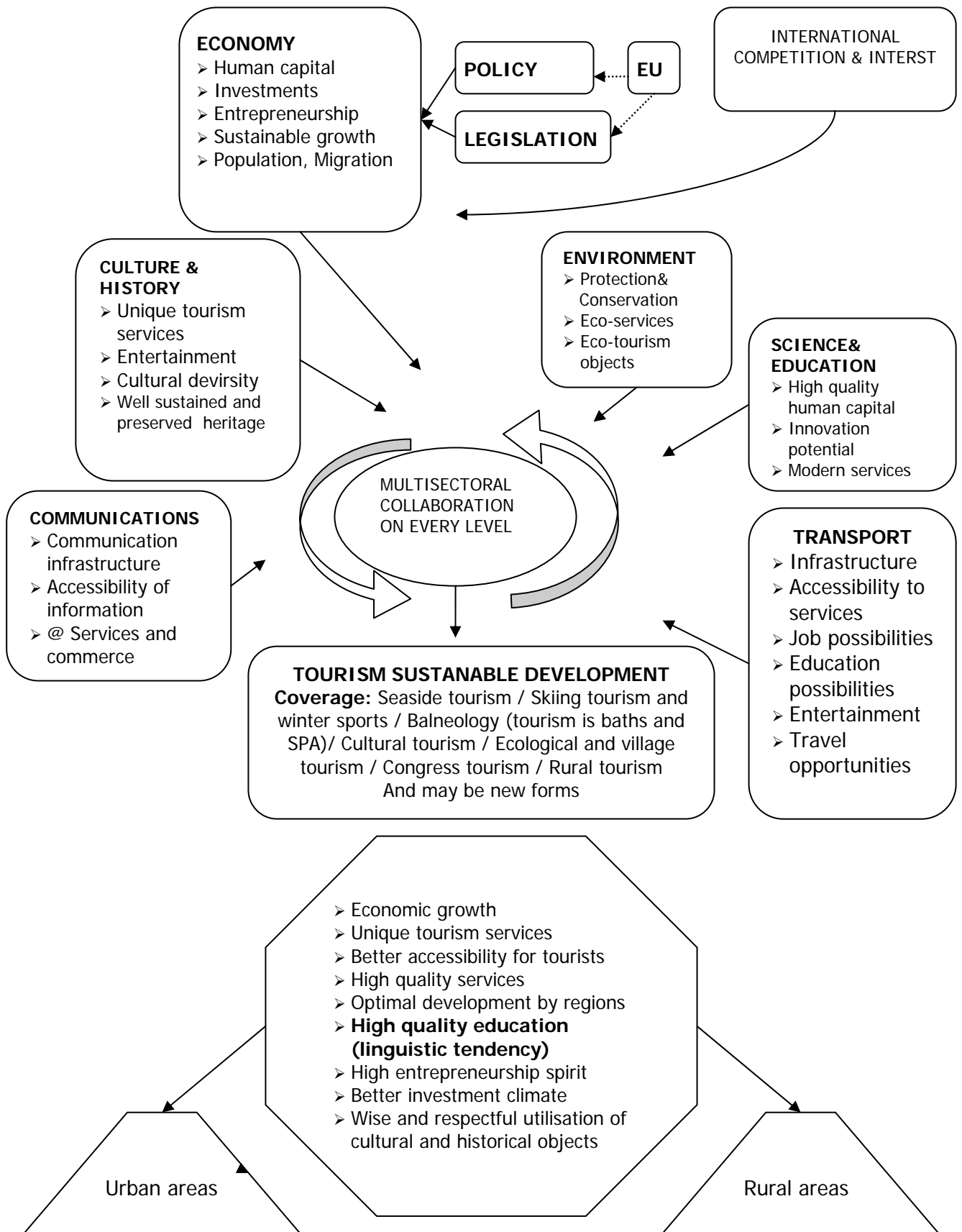
DURATION OF THE EXERCISE

The duration of the exercise will be 1 year. The work will be coordinated through periodical meetings of the expert panels – 10 meetings + 2 for wider consultancy.

KEY ACTORS

The key actors of the exercise will come from the public authority (ministries, relevant national agencies or even municipalities), branch associations, NGOs, media, academy and R&D circles. Some business representatives with significant influence or interest like transport companies (especially air transport), huge tour agencies, real estate companies, IT companies and investors in tourism will also be included.

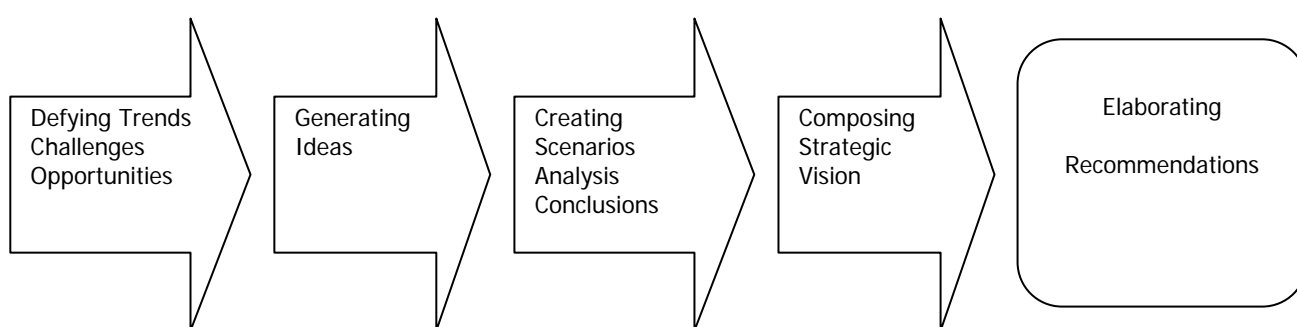
The following diagram describes the role and interconnections between the key actors.



WORK FLOW

The main types of activities that will be carried out during the foresight exercise will include:

- Gathering background information on past strategic documents and analysis, reports and studies;
- Research of the current situation in economical, structural, environmental and infrastructural aspects;
- Thorough study of the collected data;
- Evaluating the basic and specific features of all developed kinds of tourism (activities) viewed from economic, structural, demographic, historical and cultural point. The main aim to reach some conclusions of the level of development and potential of the different kinds of tourism existing in the country and compare and rank them if possible;
- Generating ideas for overcoming existing obstacles and problems in each of the sub sectors and setting priorities areas of tourism – areas that hold more promising potential and areas that are relatively more “exhausted” or will take more efforts to be sustained;
- Creating a strategic vision for sustainable development and prosperity of tourism through expanding policy targets towards promoting new forms of tourism and relevant documentation (recommendations, action plans etc).



These activities will be executed in three phases:

- 1st phase will cover gathering of the data, research and preliminary study and will be done by the project team in close collaboration with some external experts (where a specific expertise or advice is needed)
- 2nd phase will consider refined evaluation (like SWOT analysis), the process of generating ideas and strategic vision. Actually all the scenarios, reports and recommendations will be developed in this phase.
- 3rd phase will cover dissemination of the exercise and its outcomes.

ASSESSING PREVIOUS AND EXISTING WORK

This will take research and study through important statistical, strategic and expert documentation like economic analysis of the sector; demographic reports, ecology reports, national and global trends for tourism, cultural (crafts, anthropology and customs) and historical studies; national strategies for development of eco- and alternative tourism, transport, communication infrastructure, ecology etc.

Some of the examined data must be considered on European and even global level like successful cases in the tourism sector in other countries.

Use of best practices and experience from previous foresight exercises will also be useful.

BUILDING SUPPORT

Building support will take efforts to attract a wide range of politics, public, business and social attention. Working with policy makers, representatives of the state, large business, academia, branch unions, media, NGOs and experts from all concerned economic, technological and social fields, as well as PR and HR specialists, and citizens (through terrain sociological research, if needed) will bring versatile knowledge to the exercise.

It is apparent that the foresight project needs some wider support than only by the members of foresight team through their active participation in the process.

Attracting some figures with strong political influence will bring some authority and seriousness to the image of the exercise. These figures will be ministers or the relevant deputy-ministers, municipality directors and politicians.

Representatives of active NGOs and branch unions will help gaining attention from the business and the public. These participants will come from the several national tourism associations and from the major employers' organisations.

Education and academia will be presented by Bulgarian Academy of Science and University affiliates. Their contribution will be needed to support more innovative thinking and clear-sighted ideas.

Media and NGOs with activities in social sciences, history and culture fostering and development will also be needed in order to process to receive constructive critics and feedback and ensure public and moral support for the exercise.

Involving SMEs in the foresight will bring about positive effect on the outcome because their participation will bring some practical touch to the process of policy and strategy planning.

SMEs will contribute by sharing their experience and problems from their every day business life. This information will be used to make clear what obstacles the entrepreneurship meets on the very micro level and how to encourage its development. Such micro-entrepreneurship is fundamental for development of village and cultural tourism for instance as huge hotel- and tour agencies simply do not fit the concept of this kind of tourism.

On the other hand involving SMEs will help them understand and shape? The vision for development and "tune in" by adjusting their business activity in the most flexible way.

Attracting all these different participants will be organised in stages – some of them as the key actors (policy makers, representatives of the state, business, academia and R&D institutions, branch unions, NGOs and experts with fundamental significance to the exercise) will be involved from the very beginning from the first phase.

Others will appear occasionally to contribute to the work with their specific expertise only when needed, especially in the setting-the-focus stage which has proven to be one of the most contested stages of the foresight process. Some narrow specialists will be invited to share their expertise in the research stage. Journalists will be needed for the (preparation of the) dissemination stage.

RESOURCES

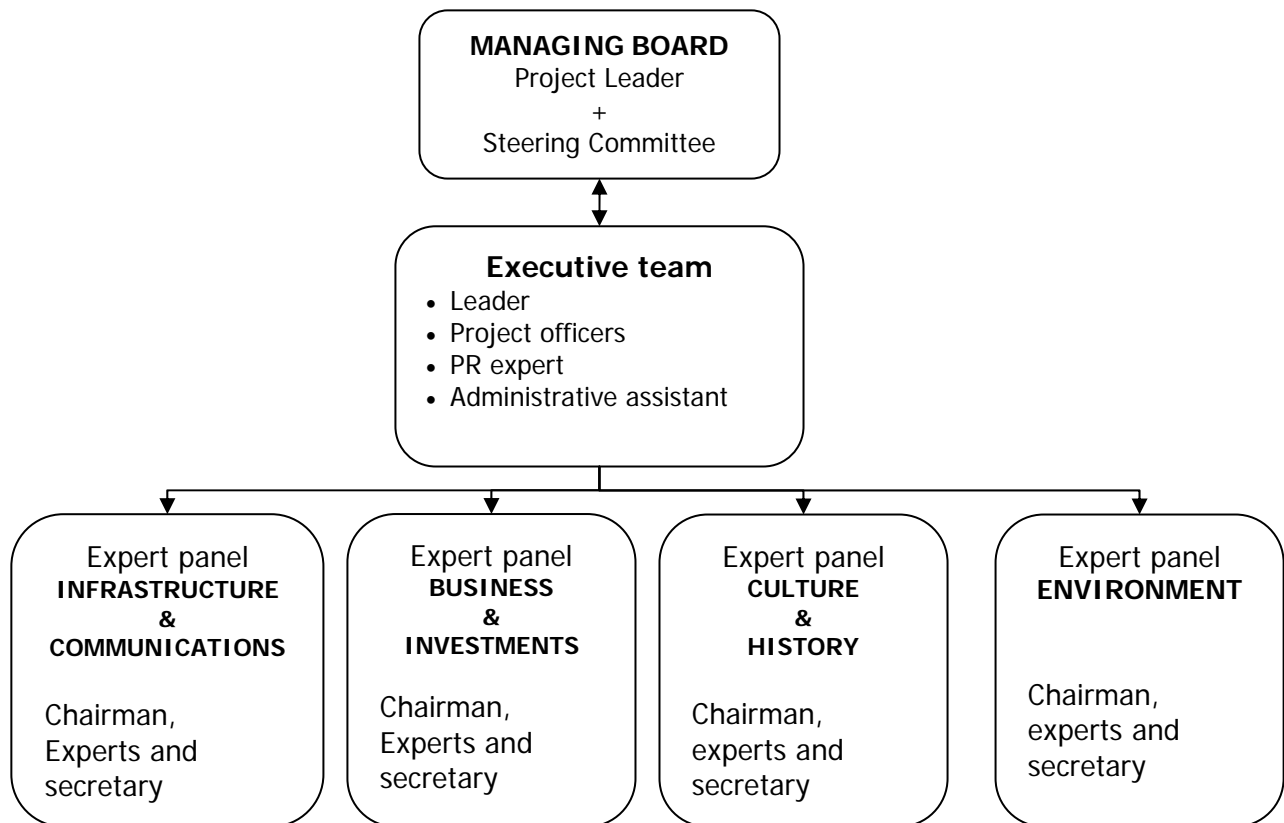
The main resources for carrying out the exercise could be divided in three general groups:

- Financial: The possible sponsors of the foresight come from public funds (ministries or government); EU structural funds and private companies or institutions with major interest in tourism.
- Expertise and HR: Policy makers, business, NGOs – representatives and experts in foresight and all concerned spheres must be attracted;
- Technical resources: equipment and facilities needed to carry out all basic and supporting activities.

THE TEAM

Building a productive team is a crucial task in order to achieve valuable results and build a really effective communication and knowledge network.

The details of the structure will be specified later on in elaborating of the project but the general structure will be:



The work of the foresight team will be organised in three phases:

- 1st phase: research and preliminary study and will be done by the project team in close collaboration of some external experts (where a specific expertise or advise is needed)
- 2nd phase: generating ideas and strategic vision. Preparation of all scenarios, reports and recommendations will be developed in this phase.
- 3rd phase: dissemination of the exercise and its outcomes.

METHODOLOGY

The following methods are chosen to be applied during the foresight exercise:

Expert panels

Reasons to do it: Expert panels provide an environment where diverse viewpoints of stakeholders can be brought together freely. The method is chosen because it allows different types of players who might not normally meet in the course of a panel such as innovators, sponsors, policy makers, academic researchers and users to be brought together.

Expected output: Building consensus between the versatile stakeholders and marking priorities of the sector.

Desk research study

Reasons to do it: The method is chosen for collecting and assessing previous work relevant to the issue;

Expected output: Detailed information about similar initiatives; pool of examples of good and bad practices; state-of-the-art reports on tourism in all demanded aspects;

STEEP

Reasons to do it: It is a decision tool, often used with SWOT

STEEPV stands for:

S	Social	population change, changing attitudes, change in customer profile, trends
T	Technological	available technology; technology used by customers; access to customers through technology
E	Economic	unique service; new markets; eroding markets; available funding; impact of Euro;
E	Environmental or Ecological	impact on the environment; opportunity to improve environmental impact; National environmental policy; funder's environmental policy
P	Political	government policies; standards; funding regime; political acceptability
V	Values	changing attitudes; organisational culture; team values personal values

The method will be used to help analyse the tourism situation during discussions in the work panels;
Expected output: Sharing information and getting everyone thinking about the issue.

SWOT Analysis

Reasons to do it: The STEEPV results will be used as input for the SWOT analysis. The method is chosen because of its simplicity and flexibility.

Expected output: A SWOT- matrix presenting the most important strengths, weaknesses, opportunities and threats for Bulgarian tourism examined and aiming at giving a reasonable overview for the further development of future vision and strategy for sustainable development.

Brainstorming

Reasons to do it: As a way to bring new ideas on how to approach the problem. It is chosen because of the creative atmosphere it brings and the effect of achieving simple definitions and reducing conflicts between participants.

Expected output: Creative ideas to go in further depths of the issue.

Road mapping

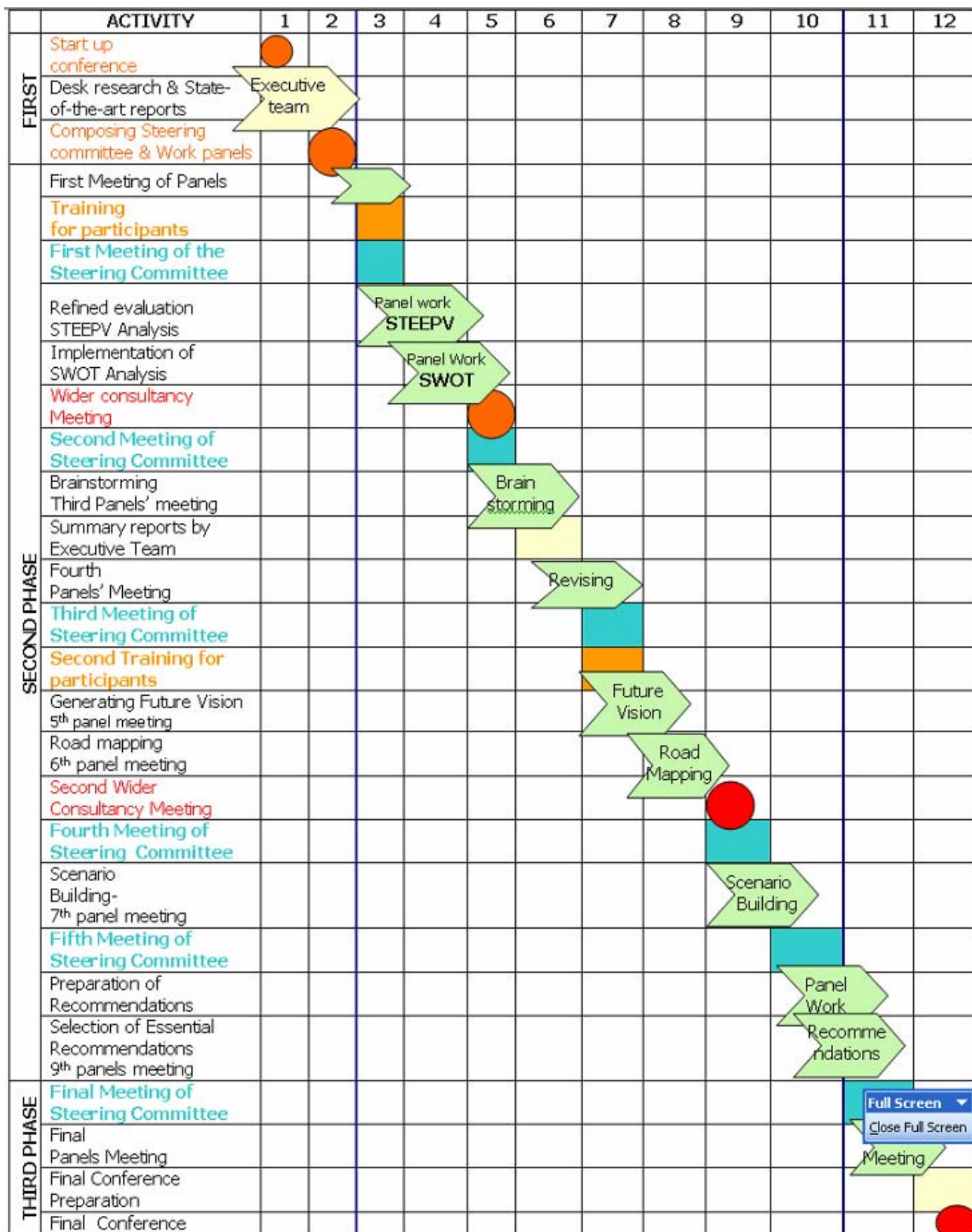
Reasons to do it: The method is chosen because of its graphical advantages – the expert panels are expected to work with huge amounts of data and bringing simplicity in terms of tasks, stages, links, dependences and interrelations is crucial for the quality of the exercise.

Expected output: The method will help draw a graphic where Bulgarian tourism is desired to be in future and how to get there.

Scenario Building

Reasons to do it: The method is chosen because of its descriptiveness. This foresight exercise is planned to reach the public and eventually receive some feedback. It is very important to use comprehensive and plain communication means in order to involve the public.

Expected output: Involve the public and initiate reflection (feedback).



SOME CLARIFICATIONS ON THE TIME SHEET DIAGRAM

The **Steering committee** will include up to 10 persons. The members of the steering group will come from the Ministry of Economy and Energy which coordinates the National Tourism Agency, Ministry of Transport, Ministry of Education and Science, Ministry of Culture, Ministry of Labour and Social Policy, Ministry of Environment and Water, Bulgarian Academy of Science, Sofia University, University of National and World Economy, Bulgarian Industrial Association, Bulgarian Chamber of Commerce and Industry, significant NGOS like The Bulgarian Tourist Chamber (BTC), The Bulgarian Association for Alternative Tourism, The Bulgarian Association for Cultural, Ecological and Rural Tourism, The Bulgarian Association of Travel Agents and The Bulgarian Hotel and Restaurant Association. Representatives of enterprises active in tourism will also be invited.

The Project leader will be responsible for approve the members of the steering committee. The steering committee will meet 6 times during the exercise.

The **executive team** will be involved with preparation, coordination activities, research, performance and report in all the phases of the work.

Panel Work: Each panel will include up to 12 panel members. The work of the panels will be coordinated by one chairman assisted by one secretary. The panels will meet 10 times.

Two meetings (workshops) for wider consultancy are planned to be carried out in the country side. The purpose of the meetings is to attract a wider public attention and initiate public debate. Also important constructive critics and ideas are expected to come from the participants of the meetings. The meetings are planned to happen in the countryside – in regions with particular significance and traditions in tourism. All local administration, municipality governors, NGOs, business representatives and media will be invited.

The **foresight team** is going to present in front of this wider public important milestones of the exercise in order to get feed back and public evaluation of its work:

First wider consultancy meeting will present the SWOT and STEEPV analysis. Second meeting is planned to be held before the scenario building phase and will present the future vision for tourism and the road mapping report.

Start up conference is planned to be organised to introduce the foresight concept and its basic mechanism in front of all potential participants. This is when forming steering committee and panels will begin.

Two **trainings** for the participants will be organised:

- The first training is planned with the purpose to educate the participants on foresight and in particular the SWOT and STEEPV analysis methods.
- The second training will be organised in the middle of the exercise. Its purpose is to evaluate the work done by that time of the project, to explicate to the participants the topics and tasks they find difficult to implement (if any) and to prepare them for the Scenario Building and final recommendations phase.

Both trainings will be carried out with the support of international foresight experts.

Final Conference will be organised for broad publicity. Its main purpose will be to report the results of the exercise and gather public feed back.

COSTS AND BUDGETING

The financial resources will be managed by the organisation of the project leader. Type of costs:

1. Participants fees:

	TYPE OF FEE	AMOUNT
1.	Expert panels fees (1 and ½ days preparation and participation) 4 panels x 12 experts, 10 meetings + 2 wider for consultancy 70 € fee per expert per day	60 480.00 €
2.	Panel chairmen and secretaries fees (2 and ½ days preparation and participation) 10 meetings + 2 wider for consultancy 4 panels x 1 chairman, 150 €/chairman per day 4 panels x 1 secretary, 100 €/secretary per day	30 000.00 €
3.	Executive team fees : 1 x Executive team leader: 10800 € salary for the whole exercise period 3 x Project Officers: 9000 €/ per officer salary for the whole exercise period 1 x Office Assistant: 7200 € salary for the whole exercise period 1 x PR Expert: 9000 €/ per officer salary for the whole exercise period	36 000.00 €
4.	Steering committee fees: 10 members. The steering group members will meet 6 times. Their fees (if any) will be determined by the Project leader.	maximum 10 000.00 €
5.	External experts for specific expertise If needed	maximum 500.00 €
6.	International experts fees 3 days preparation, 1 for training/participation 2 experts planned: 500 €/day	4 000.00 €
TOTAL COSTS:		140 980.00 €

2. Travel Costs:

	TYPE OF FEE	AMOUNT
7.	Business trips (domestic) of the panellists: 70 % of the experts are expected to come from the countryside 34 experts, 12 travels to Sofia and back, 40 €/travel	16320.00 €
8.	Business trips for the participants in the wider consultancy meetings (two): 5 collaborators, 40 €/travel (including travel costs, daily allowance and 1 night accommodation)	400.00 €
9.	Business trips of the international experts 2 experts, 2 trips totally, 1000 €per trip	4000.00 €
TOTAL COSTS:		20720.00 €

3. Consumables for the meetings:

	TYPE OF FEE	AMOUNT
10.	Start up conference	1200.00 €
11.	Final Conference	1200.00 €
12.	Panel meetings 10 x 100.00 € each	1000.00 €
13.	Two trainings for the panels 2 x 1000.00 € each	2000.00 €
14.	Wider consultancy meetings 2 x 300.00 €	600.00 €
TOTAL COSTS:		6000.00 €

4. Promotion costs:

	TYPE OF FEE	AMOUNT
15.	Web site: Creation and maintenance	2600.00 €
16.	Promotional materials Leaflets, brochures, book of recommendations	2400.00 €
TOTAL COSTS:		5000.00 €

TOTAL COSTS:		172 700.00 €
---------------------	--	---------------------

COMMUNICATION STRATEGY

Organising the communication strategy is vital for effectiveness of the process – not only on external level (between the participants) but also on public level (having in mind the comprehensiveness of the sector). That is why a PR-expert is included in the work team.

The managing board and the executive team will coordinate the communication process through organising meetings, workshops, discussions and mailings and @-forums.

Other interested parties will be able to give opinions, comments and feed back through internet (web page and forum) and the public media channels (articles, interviews, press releases and conferences and periodical reports on the exercise).

As being relatively new activity for Bulgaria it is important to get public interest and debate on the Foresight exercise.

The project will be actively promoted to the wider publicity in order to present the achievements of the exercise and build common public understanding which in future will make easier the process of convincing and involving actors and support in new foresight exercises.

Another reason for promoting widely the exercise is that the chosen thematic is extremely multidisciplinary and concerns in one way or another numerous layers of economy (policy, legislation, funding, administration, municipalities huge and micro business and infrastructure etc.) and society (history, culture, education, public interest etc.).

It is possible good ideas and valuable comments to be brought to the project by the external environment. Keeping feed back on public opinion is also important because common sense should adopt the vision created by the exercise in order to make it useful and successful initiative.

Project 9: The Future of Medicinal Plants Products of the Andean High Plateau and Central Valleys

RATIONALES

The Andean regions of the participating countries are facing similar situations with regard to their economies. Although there is a great recognized potential for income generation through the development of region-specific products, such as medicinal plants products, insight into which products to develop and what technologies to employ in order to access markets is lacking.



This Foresight project will focus on the medicinal plants products industry as conceived of as an integrated production chain, involving the following sectors: natural resources, industrial inputs, extraction, processing, production, consumption and other related sectors. To raise production levels, productivity and competitiveness of products of Andean region origin, the related industrial sectors and sub-sectors should be reorganized as productive chains, incorporating the necessary institutional framework for modern industry, financial services, wholesale markets, commodities exchanges and future markets, price information, quality standards, traceability, controls and certification, export marketing agencies and transportation facilities and infrastructure. To capture this complex reorganization process, future studies and trend analysis are on demand to cover structural and functional change scenarios, as well as technology development, which will affect gains and losses for the present industrial basis in the region.

Technology foresight is one of the main tools to identify and systematically analyse possible future states (opportunities and threats) by taking into account social, technological, economic, environmental and political factors and drivers, as well as value systems of the stakeholders. A pan national Technology Foresight study, as proposed in the present project, could contribute to raise awareness and build consensus and agreements among the key stakeholders to conduct this reorganization in a sustainable manner.

OBJECTIVE

The immediate objective of the study is to assist decision makers in identifying strategic technology areas for the industry of medicinal plants products to raise their competitive advantage and to enable the national products to better access the regional and the global markets and in this way increasing economic and social wealth in the region.

Additional objectives are to:

- Build capacity at institution and company levels to identify risks and opportunities on how to improve value-chain competitiveness through the application and use of technology foresight analysis and methodologies;

- Establish a knowledge-based network related to national TF initiatives, programmes, activities and methodologies to make available a regional reference source of information, expertise and comparative studies;
- Strengthen interaction, communication and cooperation between all relevant stakeholders of the innovation systems at the regional level.

CONTEXT

The project will concentrate in the Andean High Plateau and Central Valleys of the following countries: Ecuador, Bolivia and Peru. (Regional-Pan national project)

Sector

The Andean regions of the participating countries are facing similar situations with regard to their economies. Although there is a great recognized potential for income generation through the development of region-specific products, such as medicinal plants products, insight into which products to develop and what technologies to employ in order to access markets is lacking.

UNIDO

Activities on TF have been part of the UNIDO technical cooperation since 1997. In view of these past experiences UNIDO has developed and acquired sufficient expertise to respond to demands and needs related to TF.

Knowing the relevance of a sustainable industrial development in Latin America and being aware of the growing interest for TF in the region, UNIDO launched in 2003 a Regional TF Programme. The regional programme has been carried out focusing on the analysis of productive-chains. The first regional productive chain foresight study to be carried out by UNIDO is the fishery industry in the Pacific coast of South America, financed by Spain (www.unido.org/foresight-fishery-industry).

Participating countries' strategy

This project will address the policies and strategies for mountain development. The objectives of the project are consistent with the participating countries' objectives regarding rural development and tapping of unique Andean resources. One common strategy of the target countries is reflected in the Andean Trade Preferences Act, adopted in 1991. This act provides duty-free access to U.S. markets for some 5,600 products from the four eligible countries of Bolivia, Colombia, Ecuador and Peru. The ATPA contains intellectual property rights-related criteria, both mandatory and discretionary. The US Trade Act of 2002 renewed the ATPA program and extended new benefits to 700 additional products.

Reference for the project is also the sectoral policies and strategies of the Bolivian Strategy to Combat Poverty. The strategy includes a plan of action based on "measures for sustainable living", which involve giving the mountain inhabitants more opportunities for sustainable and equal access to natural and socio-economic resources and social and production infrastructure.

Both in Ecuador and in Peru there are no specific policies and strategies for the high lands as a whole. In Ecuador, one reference for the study will be the government strategy for rural development and development of the agriculture, forestry, agroindustry and irrigation. This strategy is linked to the Government's Economic Reactivation Agenda of Ecuador.

Regional Level

The strategic reference will be the Consortium for the sustainable Development of the Andean Region (CONDESAM), which aim at the preservation of the Biodiversity in the High Plateau in the Northern and Central Andes.

The most important partners of the target region for external aid and cooperation are the Inter-American Development Bank and the Corporacion Andina de Fomento (CAF). Both organizations have a large number of projects dedicated to the sub-region, which could be relevant for the present study. During the implementation of the study, a careful evaluation of the outputs and information from the available project files will be conducted. Representatives of these organizations will be participating in the conferences of the present study.

The Corporacion Andina de Fomento (CAF) and Harvard University (via the Center for International Development) had cooperated on a multi-year Andean Competitiveness Project (ACP), in conjunction with Andean research institutions, private sector representatives, other members of civil society, and the governments of Bolivia, Colombia, Ecuador, Peru, and Venezuela. The ACP began officially in December 1999 and closed by July 2002. It contributed to define and promote an integrated agenda for national and regional competitiveness to encourage

environmentally sustainable growth and significantly improve living conditions in the region. Its conclusions and results will be considered in the present project.

POLITICAL SUPPORT

The countries have welcomed the implementation of the project through official letters. The Governments of the participating countries will further on confirm their support and interest in the project by officially nominating a national coordinator, national high counterpart and an in-kind contribution to the project. (Please see table 1 and 2).

When the government has been included in intense dialogues through the project implementation (with the rest of the stakeholders), the government and participants in general feel ownership of the ideas generated, and thus willing to co-ordinate their future actions.

FOCUS, SCOPE AND COVERAGE

The **focus** is the industry for medicinal plants products and its technology development.

Scope

- Geographically, the scope it is covering three countries: Ecuador, Bolivia and Peru.
- Thematic: the future technologies applied to the mentioned industry.

The **coverage** is a group of medicinal plants in this region.

EXPECTED TARGETS USERS

Expected beneficiaries will be first at all the communities on the Andean High Plateau and Central Valleys of Bolivia, Ecuador and Peru. Moreover the project will benefit the Governments of the three participating countries, industry and consumers.

TIME HORIZON FOR THE PROJECT

The time horizon for the Foresight study will be 5-10 years.
The project will last for 24 months.

EXPECTED OUTCOMES

- State of the art report on medicinal plants of the region
- TF study for the industry of medicinal plants in the region.

PARTICIPANTS/PROJECT TEAM

UNIDO

Function:

- Project concept and management;
- Overall coordination of the agents of the project;
- Preparation and maintenance of the main information and data base for the project;
- Final evaluation and preparation of the project reports;
- The UNIDO regional office will logistically support the application of the project.

Host counterparts

Profile:

- High level leadership and mandate for defining and implementing economic and technological development policies;
- Capacity to formulate and evaluate industrial and technology strategies at the long run;
- Capacity of coordinating different institutions, government authorities and enterprises related to the subject productive chain.

Functions:

- Coordinating the different institutions at the national level involved in the project and facilitating the work to be allocated to these institutions;
- Policy decision on critical issues for the implementation of the project;
- Definition of the priorities and highlights for the project;
- Providing funding contribution to the project.

National coordinators

Profile:

- Coordination capacity with the authorities responsible for defining and implementing economic, industrial and technological development policies;
- Experience in project and expert teams administration;
- Technical capability in the related knowledge areas;
- Relationship with the agents of the subject productive chain.

Functions:

- Selection of experts and other institutions/organizations/representatives interested in participating in the different meetings;
- Facilitation of information to the sectorial experts;
- Preparation (with the sectorial expert) of the report regarding actions and recommendations at national level based in the roadmapping workshop;
- Nomination of the national members of the Regional Panel;
- Participation in the different panels;
- Participation in the conferences;
- Collaboration in the preparation of the different meetings and conferences.

Regional coordinator

Profile:

- Coordination capacity with the different authorities responsible for the national coordination, the methodological coordinator and UNIDO;
- Experience in project and expert teams administration;
- Knowledge of foresight methodologies;
- Capability to produce reports and communication in Spanish and English languages;
- Technical capability in the related knowledge areas;

Functions:

- Coordination activities between UNIDO, the methodological institution and the rest of the agents;
- Revision of the experts' works;
- Assistance to the national teams regarding the implementation of the project;
- Collaboration in the organization of the different workshops, meetings and conferences and preparing different reports.

Expert Foresight Institution

Profile:

- International experience in conducting and assisting developing countries, with focus in Latin America and the Caribbean, in developing and implementing technology foresight activities;
- Recognized centre of excellence in technology foresight methodology and applications;
- Good relations and networking with the industry and other agents of the subject productive chain;
- Established extensive research network with similar centres of excellence worldwide and especially in Latin America;
- Track record of foresight studies;
- Capability to produce reports and communication in Spanish language (mandatory condition).

Functions:

- Advice on the methodology for the project;
- Advice on the design of the project;
- Preparation of terms of reference for national coordinators, regional coordinator and sectoral experts;
- Conducting and moderating the project workshops and conferences, such as the visions and roadmapping workshops, the regional conferences and regional panel;
- Designing the consultation process and documentation;
- Assisting the national agents;
- Preparation of project reports.

International experts

Duties:

- State of the art and swot analysis of the subject production chains;
- Participation in the regional panel, workshops and conferences;
- Elaboration of reports;
- Collection and organization of documentation and research data and electronic data management

The study will involve the participation of a great number of specialists and stakeholders such as policy makers, consumers associations, NGOs working with the indigenous groups, technology experts, industry, etc. By having all of them been included in intense dialogues through the project implementation, participants feel ownership of the ideas generated, and thus willing to co-ordinate their future actions. In this way uncertainty can also be reduced as the participants have a good understanding of each other's future strategic intentions; based on the shared visions they arrived at during their joint deliberations. This process will potentially lead to a consensus on the future of the mentioned industry.

COMMUNICATION STRATEGY

Through different information channels such as web page (UNIDO and other organizations and institutions), articles in the different newspapers, participation in conferences, workshops and open forum (on-line) all participants and the rest of interested persons will have the possibility to follow up and give comments during the implementation of the project.

FINANCIAL RESSOURCES AND SPONSORS

- € 250.000 co-financed by the Government of Spain and UNIDO
- € 90.000 in-kind (30.000 per participating country)
- Total : €340.000

ASSESSING PREVIOUS AND EXISTING WORK

- Experience gained through the regional foresight study developed by UNIDO for the fishery industry in South America (regional production chain study) and the project on upgrading production and processing technologies and commercialization of vicuna and llama fibres for textile sector (Peru).
- Studies on the different medicinal plants products of the Andean Region.
- Other studies related to medicinal plants (as the International Centre for Science and High Technology has already done).
- Foresight studies on medicinal plants products.
- Background information about the basic productive chain structure of this industry.
- Background information about the values and cultural background of the ethnic groups living in this area.
- List of different NGOs working with these indigenous groups.

METHODOLOGY

The methodology approach for the present project consists of a series of basic stages organized sequentially (See Figure 1). It is important to stand out that this method is based in a continuous process of participation and evaluation of the experts involved in the project.

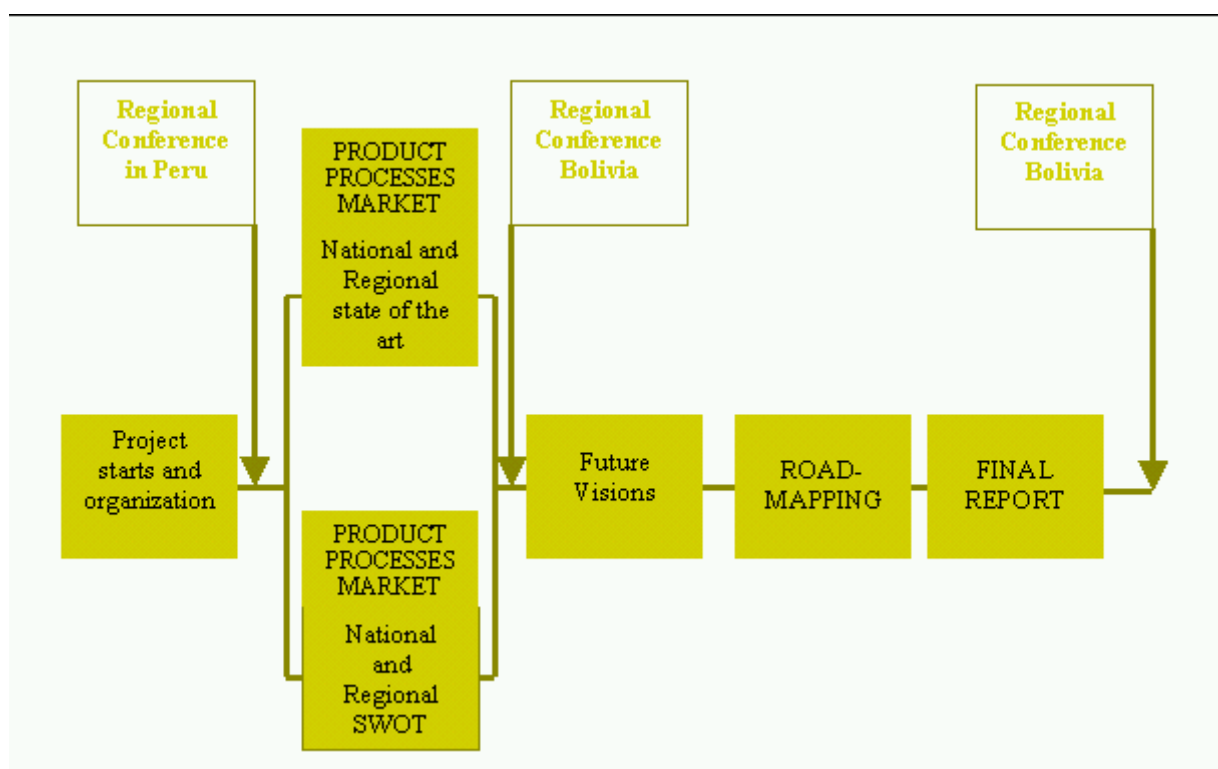


Figure: 1 Methodological Approach

1. Starting and organization of the process
 - Setting up the main goal and scope of the project.
 - Definition of the time horizon of the project.
 - Estimation of the duration of the project.
2. Regional conference in Peru (Cuzco)
 - Presentation of the project and the methodology.
 - Definition of the different teams and their work.
 - Official start of the project
3. National and regional State of the Art
 - Analysis of the present situation of the sector in each country and at regional level.
 - A description of the present situation of the selected sector will be prepared for each country from three different perspectives (Based on the national reports a regional description will be developed):
 - Product perspective, where all the aspects related to raw materials, final and by-products will be described.
 - Production perspective, where productive chains and the main producers of the sector will be described and identified.
 - Market perspective, where the current market situation will be analyzed, in terms of demand, distribution channels, legislation and commercialization procedures.
4. National and regional SWOT
 - Analysis of the strengths, weaknesses, opportunities and threats of the Andean region as a whole, based on the state of the art reports:
 - The integration of the national state-of-the-art reports.
 - The analysis of the strengths, weaknesses, opportunities and threats of the industry of the region.
5. Regional conference in Bolivia (Potosí).

In this conference two main activities will take place:

 - Presentation of the results obtained until this moment.
 - Future visions panel. In this panel, a group of 20 – 30 experts from the Public Administration (regional and national level), sectorial experts and Andean community representatives (NGOs, etc.) will describe future scenarios of the sector in terms of:
 - Technology requirements.
 - Strengthen of the current markets.

- Opening of new markets.
- Development of a strong brand image.
- ...

There will be one meeting of the expert panel to define future visions for the sector. These future visions will be based on the information derived from the SWOT analysis and the state-of-the-art. The establishment of future visions and strategic objectives is one of the most important issues when developing a roadmap, as they set a series of objectives for the sector in the future (“where do we want to be?”) and the time horizon to reach those objectives (“when are we going to accomplish them”). When all agents operating in the sector reach a consensus on a strategic vision a linear trend in the evolution of the sector can be broken and thus lead to innovative solutions and to important technology breakthroughs. By relating the present situation of the sector with the future, these visions may help focus efforts on how to reach those objectives from the present.

Future visions are a compromise among all parties involved in the process, and so special attention must be paid to make them realistic and easily understandable. It is also important to notice that a roadmap needs multidisciplinary approach to the subject and so creativity must be promoted during the process.

6. Roadmapping

Once future visions for the sector – region have been developed, a roadmapping will be developed with the following methodology:

- Defining barriers to progress. Having reached a consensus on the future direction for the sector, the next stage is to determine “What is stopping us getting there?” In addition, challenges derived from those barriers will be identified, in relation to products, production process, technology and markets.
- Identifying possible solutions. In this stage, the expert panel will identify different alternatives to overcome those barriers identified in the previous stage also in relation to products, production process, technology and markets. The different alternatives will be organised in terms of their potential to overcome barriers and help achieve the objectives of the project. In addition, experts must determine the time horizon in which items identified in the roadmap will be materialized.

The outcome of this process will consist of a list of prioritized items, which corresponds to each one of the actions identified to reach the future objectives. The sequence of the process can be summarised as follows:



In order to develop the roadmap, a selected expert panel will be called on two meeting. This workgroup will be composed of a maximum of 15 sectorial and regional experts. The activities to be developed by this expert panel can be summarised as follows:

- First meeting: Taking into account all the information derived from the state-of-the-art, the SWOT analysis and the future visions, experts will identify the barriers that prevent the sector from developing and getting to the objectives, which have already been established. Once barriers have been identified, experts will suggest different alternatives (technological, economical, human resources, commercial, trade mark, etc.) to overcome such barriers.
- Second meeting: In this meeting, experts will prioritise the suggested alternatives and will identify key actions to be put into practise in order to reach the future visions which have been already established. This actions should be related to:
 - Business management and strategic planning activities
 - Commercialisation and marketing
 - Human Resources
 - Legislation

In addition, experts will define the different roles of all agents involved in the process (Industry, Administration, R&D Centres, University, etc.).

7. Formulation of strategic recommendations

- Evaluation of possible implications for the sector.
- Identification of future opportunities for the sector.

- Elaboration of strategic recommendations for the future development of the sector from the regional and the business point of view.
 - Elaboration of the final report.
8. Final conference in Ecuador (Otavalo)
- Dissemination of the results of the project

Project 10: Lithuanian Research 2008 – 2017: National Priority Settings for Research and Technological Development for Better Fulfilment to Society Needs

PREFACE

Lithuania – small country in terms of geographical and social terms (area – 65,3 thousand square km and population 3,6 million). Since country is lack of natural resources, high quality service and production based on high technological innovation with high added value is major importance for country.

Present status: Research and technological development is financed of 0,76 per cent of GDP. It is key importance to distribute reasonably the insufficient financial resources for RTD in order to keep competitive positions in the world and in EU market. RTD is not directly connected with the well being in the minds of wide society in Lithuania. Broad gap between RTD results and innovation which can influence well being for society leads to the misunderstanding between policy makers and RTD performers. The insufficient attention was paid to RTD on governmental level, could lead to the decrease of competitiveness in the world market in the near future.

Budgetary and financing methods applied to RTD sector are not adequate and do not respond to the present needs of competitive global market.

Foresight could be the instrument to define Lithuanian RTD national strengths in the EU context.

FOCUS AND OBJECTIVES

Foresight is applying in order to determine state policy in the next aeries:

- State policy formation in terms of competitiveness : to make Lithuania more competitive based on high added value production
 - State policy in research and technological development as key factor for Lithuania's competitiveness.
 - State policy for innovation: to make SME's sector enable to become adaptive to new technological innovation (to make links between research and its applications as innovation for private sector)

PLAUSIBLE OUTCOMES

The outcomes of the foresight are expected to be a reported as strategy for national research and technological development, which will lead to defining of research and technological priorities. These priorities will become criteria's for additional financial funds allocation. The aspects of RTD sector restructurisation should be analyzed and new scheme of governance should be propose.

TIME HORIZON

The time horizon of the exercise is 10 years with one intermediate dates at 2009 (short term strategy for immediate applications). The last focus date is 2017.

The longer term is not reasonable since innovation process which is tightly connected with fundamental and basic research should be re-examined in short term manner, as three-four years are crucial for new results achievement and new trends applications if results are not satisfied. The time horizon is adjusted to EU financial period and looks a little bit further in the future.

POTENTIAL USERS

Outcomes of foresight are of major importance for policy makers especially for research and technological policy makers and also implementers. Possible results could be affected on governmental research funds operation and distribution.

PREVIOUS AND EXISTING WORK

There was no exercise as Foresight applied any previous years in Lithuania, just analyses on temporary status were carried out. The studies of future impacts of any strategy have not been applied.

Any studies on present research and technological development priorities were not introduced in Lithuania. The expertise on Lithuanian RTD system was carried out by external experts from Norway council in 1995.

Two attempts to establish national programs on Industrial Biotechnology and Higher Technology Development are underway but not proven by any foresight exercise.

The National priorities in research and technological development were established for period 2002-2006. This document validation is expired.

The Research and Technology Development Implementation Plan for 2007-2010 was adopted based on consultation with leaders in the scientific and business sector.

MAPPING AVAILABLE RESOURCES

The expected duration of the foresight exercise is 12 month with possible extension to 18 months. The quality of foresight is mainly depends on reasonable resources attracted to exercise.

The following resources are needed:

- High quality administration (consultation company, act as a foresight team)
- Sufficient financial resources (budgetary (financial support of Ministry of Education and Science and Ministry of Economy) and structural funds)
- Wide range of qualified individuals experts:
 - National experts from public and state RTD sectors
 - International experts from public and state RTD sectors
 - Experts from governmental level
 - Experts from business community
- Special ICT interments for data collection and analysis.

SETTING-UP A FORESIGHT EXERCISE

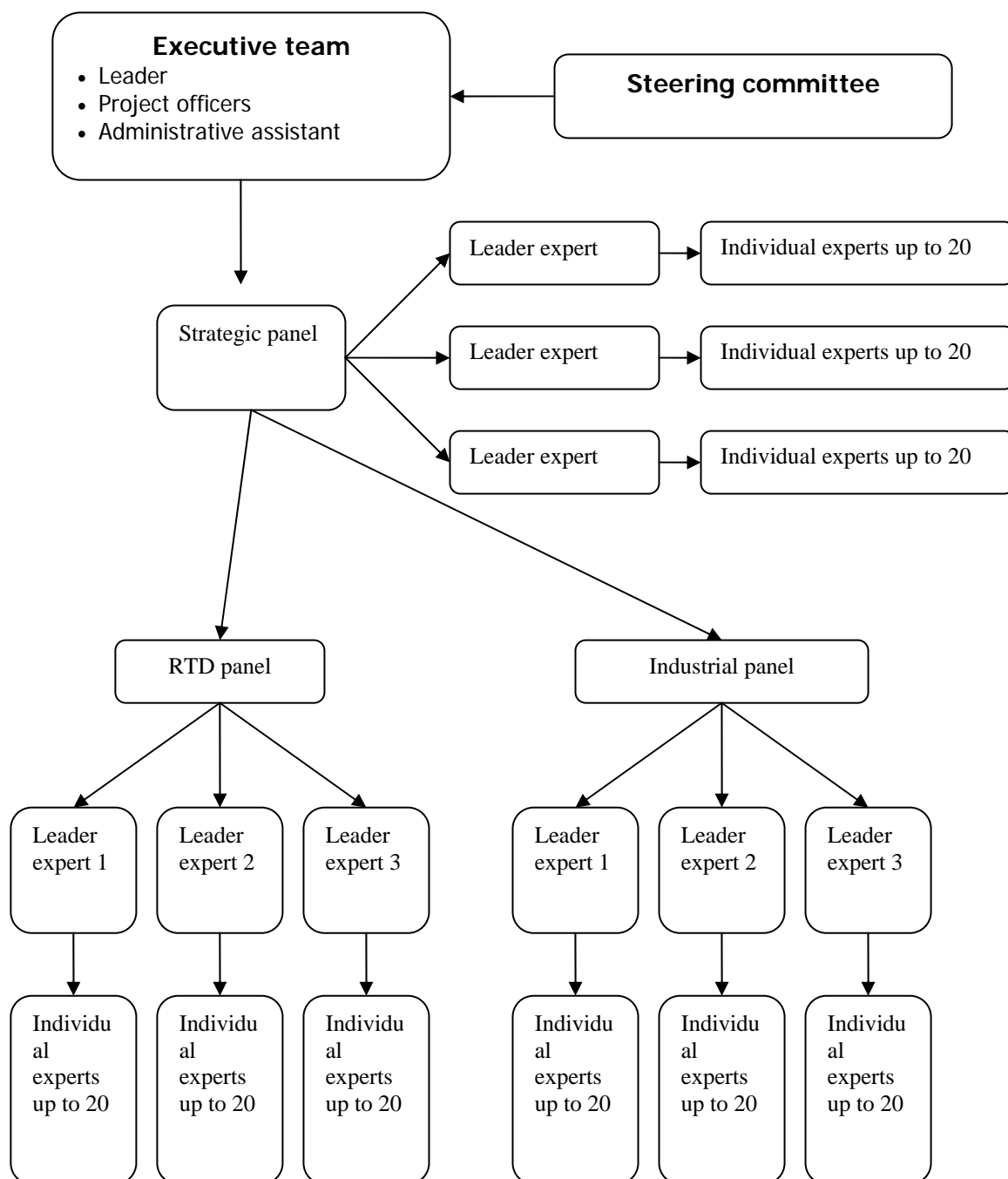
The foresight will be managed by independent team, selected by independent international competition. Team will be responsible for administration assistance: from assistance of panel in every day work till handling the communication activities. Team is supervised by Steering committee. (Who should be involved in steering committee is not clear for me. It may be foresight exercise consumers).

Work activities will be divided into three panels with different responsibility levels (Figure 1).

- Strategic panel. The main actors are policy makers, governmental sector representatives, researchers, business sector representatives and others.
- RTD panel. Main actors are researchers (experience and less experience researchers, young scientist, starting from PhD students), others who act as RTD actors (research administrators, engineers). The number of participants could reach 200, grouped by thematic or other special criterions, which could be defined in the beginning of foresight.
- Industrial panel. Wide range of industrial actors from administration to production level.

The background studies for main priorities identification will be carry in to Research and industry panels. Strategic panel will have focus into the summarizing of the findings of RTD and industrial panels and into incorporation it in to whole strategy with concern of social needs.

Figure 1



METHODOLOGY

I would propose several types of methodology applied to the work for different panels. For instance: RDT and industrial panels, which focus on research capabilities and industry needs studies and also new trends identification would be used roadmapping methods. Although strategic panel could use scenario method, since the key objective of the panel is identification of the main trends of the future country development on base of RDT potential, industry needs and possible breakthrough.

COMMUNICATION

Communication is the method to make process open for wide interested community. Right communication plan could secure independent and unprejudiced outputs and will help to motivate individual experts to add their inputs.

Special strategy depended on foresight stages will be applied. A conference for starting the foresight exercise and conference presenting foresight results are the key communication elements. Some workshops on special target question should be planed.

Project 11: The Rural Sector in Cyprus – A Long Term (Up To 2050) Perspective

INTRODUCTION

Despite the fact that for a country the size of Cyprus, distances are quite small and even the remotest village is within a maximum drive of just one hour from the nearest town, one can still identify a distinct rural sector with many of the problems associated with rural areas all over Europe (lower per capita incomes, access to services, development potential, depopulation, aging populations, etc). The government of Cyprus already includes the rural areas in the priority sectors under national development expenditure, and is exercising every effort to absorb the maximum assistance from the Union's structural funds for the benefit of these deprived areas. Within this framework, the development of the rural areas in Cyprus maintains its high priority status in the Strategic Development Plan, 2007-2013, currently under preparation.

RATIONALE AND OBJECTIVES

National Development Plans and annual Budgets try to incorporate policies, projects and specific measures for confronting the problems faced by the rural areas. However, even in the case of Development Plans with a 7 year planning horizon, it is difficult to fully address the underlying causes of the rural/urban gap. The result is usually the "correct" identification of the problem, the promotion of policies, projects, support measures and others that usually address the income and the access sides of the problem, the easing off of the symptoms, but not the curing of the disease. It is with this in mind that the potential for a 50 year planning horizon assumes a much greater significance, particularly taking into account the opportunities offered by Foresight. A 50 year plan that would incorporate the selective wisdom of all stakeholders and would take account of world developments, trends, opportunities and best practices. The basic objective is to use Foresight to develop a long term rural development policy that could serve as a guiding tool for the medium term development plans of government and as framework for attracting EU funds.

IDENTIFYING THE PROBLEM

It is not difficult in Cyprus to gain access to a wealth of information on the rural areas. There exist disaggregated and reliable statistics on demography, rural incomes, agricultural production, health and education provision, geographical characteristics, geological and hydrological data, spatial planning plans, past support measures etc. A small group of experts can be assigned the task of carrying out a desk study based on available data and to provide a report which will identify the extent of the problem and, probably, set down a number of indicators which can serve as the basis of discussion for the setting of the targets. The report will serve as the basis of the Foresight exercise (the work towards producing report itself can be part of the exercise).

IDENTIFYING THE PARTICIPANTS

There can be a lot of actors in this exercise. However, it may be the case that we set the number of actors for each stage of the exercise so as to achieve versatility at the beginning but still enjoy the wisdom of the many when we reach the recommendations stage. The competent government departments (Planning Bureau, Ministries of Interior, Agriculture, Communications, Health, Industry and Education, Cyprus Tourism Organisation) will have to be involved from the beginning. So would local government (through their associations), farmers unions, environmental NGOs and the Cyprus Chamber of Commerce and Industry. A small number of resource persons, basically from research institutions and/or academia can also get involved. At a later stage, when recommendations will be discussed, various interest groups (land developers, tourist agencies, financing institutions, local interest groups etc) will be called for the exchange of views. This stage will be complemented by a series of public hearings.

DETERMINING THE COVERAGE

Although it may appear evident, the split between rural and urban areas (or the rural and urban sectors) is not so easy to identify. One of the primary tasks of the task force to be set up, once the identification report is ready, will be to delineate the project area and to establish the development parameters to be addressed. At the same time the time horizon (and the budget) of the whole exercise will also have to be determined.

USERS

The main user of the results will be the government. These results will be an invaluable input into the medium term plans and other policy commitments (either at national or Union level). Local government and in particular village Boards will greatly benefit from the recommendations, particularly in the formulation of proposals and the identification of funding possibilities. The same holds true for potential investors in the rural areas, whereas the whole exercise can be of immense value to academics. Bearing in mind that rural sector in Cyprus is, at least in form, quite similar to many of the rural areas of Europe, the exercise might also have transnational spillover effects.

GETTING STARTED

The government will have to be persuaded to support the whole initiative and if possible to assist in the financing of the first part of the exercise which is the preparation of the Identification Report. The coordination of the project can rest with a small unit that can be set up in the form of a trust fund (non profit making organization). Both decisions would require the approval of the Minister of Finance and the Council of Ministers. The other institutional actors will not be difficult to attract, especially if there is no financial contribution requested.

The financing of the Foresight exercise itself, which constitutes the work of the second and third faces, will have to be discussed and solved once the Identification Report is produced. The possibility of drawing funds from some EU Programme/Initiative should not be discounted

ASSESSING EXISTING WORK

Assessing existing work will be one of the primary objectives of the Task force to be set up after the completion of the Identification Report. The job can be assigned to a sub-group consisting of practitioners (planners, agronomists, academics) and it will involve not only data on the project area but also past experience, best practices, previous funding experience etc.

BUILDING SUPPORT

Building Support may not be that difficult. There has been extensive experience in Cyprus in Integrated Rural Development Management, with very good results, so the idea of developing the exercise into a full Foresight exercise with a long term horizon will go well both with government but also with political parties. There might be a bit of a reluctance from the part of local government in the sense that they be in search of short term (politically more valuable) results, than long term strategy and also from an underlying concern that long term plans tend to set restrictions to local development in the sense that they take environmental concerns heavily into consideration.

SELECTION OF METHODS

It may be still too early to talk about the methods to be used. Foresight expertise in Cyprus is virtually non existent and it may be prudent to discuss the available alternatives before making commitments. This is one area where the collective wisdom to come out of the June workshop may prove useful.

Project 12: ForeMat – Polish Scenario for Development of the Modern Material Technologies in Perspective 2020

RATIONALE OF THE PROJECT

Materials play more and more a crucial role for the total economy development. The development and application of modern materials technologies has a great impact not only on the Polish economy but also on the health and security of their citizens. It is especially important in the present time, since the Polish economy and its consumer market are under the transformation. Foresight could be an essential part of this process to identify new opportunities for industry, government and the research sector. Special attention should be paid on the research sector, which needs a fundamental reorganization and adaptation to the new geo-political system. Radical changes in the structure of the industry from one side and the limited financing sources for research from another side causes necessity of the strong concentration on the research areas most promising for the Polish economy. The foresight exercise would be an extremely useful tool in the selection and prioritization of the technologies needed to increase Poland's competitiveness and the creation of possible scenarios for their development.

USERS AND ACTORS OF THE FORESIGHT PROCESS

Users of the Project results

The foresight study is addressed mainly to the policy-makers in the Ministry of Economy and Ministry of Science. However beneficiaries of the project will be also managers in the different industry sectors (for example: machinery production, aircraft production, construction) and scientists engaged in the material research and material engineering.

Participants of the foresight process

Therefore in the foresight process will be engaged:

- Policy makers (mainly from the Ministry of Economy and Ministry of Science)
- Researchers from the relevant research and development sectors
- Representatives of non governmental organisations
- Journalists industry

The more complex list of the potential beneficiaries will be precise during the foresight process.

OBJECTIVES

The objectives of this Foresight study are as following:

- To carry out a worldwide comparative review of the status of this important technology in the are of modern materials (ceramics, smart materials, nanopowders,...)
- To identify the key drivers and barriers to its commercial exploitation,
- To prioritize research areas most promising for the Polish economy
- To create a vision and to build scenarios of the modern material technologies development
- To recommend a strategy for future Polish government funding support.

RESULTS AND IMPACT

The outcomes of the project will be addressed, first of all, to the Ministry of Economy and Ministry of Science as main users of the project results, supporting them in creation of the national strategy and research policy.

Realization of the project allows for recognition of the Polish potential in the sector of production and development of materials as well as identification of the niches, the key technologies and the products which are presently the most important for increasing of the Polish competitiveness.

Additional effect of the project will be dissemination of the foresight methodology between politician and the research society in Poland. The main achievement of the project will be presented on an open national conference and will be published in different media as well as on public and internal reports.

UNDERSTANDING THE CONTEXT

Rapidly growing importance of the materials technologies for the world economy, the fast development of the modern materials as well as radically changes of their properties and explicabilities - caused an increasing number of technology foresight exercises in this area.

The world leaders in this type of foresight exercises are:

- Foresight Institute and National Science and Technology Council w USA (Advanced Materials and Processing US Office of Science and Technology Policies, July 1993) Advanced Manufacturing Technology for Polymer Composite Structures in Japan, Wilkins DJ (Ed). Loyola College, Baltimore MD 1994 ;)
- National Institute of Science and Technology Policy in Japan. (Advanced Materials The Japanese Strategy for the 1990s Report by the High-Level Mission on Advanced Materials Application, 1990; Technology Foresight in Japan, Terutaka Kuwahara; Japan Technology Foresight Summit 2003).

Important inputs for developing the materials technology foresight are:

- The UK Government /1st Round of Foresight (1994 – 1999) - Smart Materials For The 21st Century/,
- The Northern Ireland Centre for Advanced Materials in Ireland and Interdisciplinary Centre of Technology Analysis & Forecasting in Israel.

Therefore the realisation of the Polish project ForeMat will be preceded by broad analyses of the foresight exercises performed in other countries.

SETTING-UP A FORESIGHT EXERCISE

The project will consist of 6 main phases as following:

1. Review of the technology foresight exercises in the area of material production, development and their applications performed in Poland and abroad
2. Collection and analyses of the information about the materials and technologies used presently in Poland
3. Performing a SWOT analyses and prerequisite tree for relevant technology sectors in Poland
4. Foresight Material Thematic Panels (establishing important technology areas)
5. Cross-Impact-Analyses of the information obtained from thematic panels
6. Identification of the “product-material” pairs and prioritisation of the technology and materials by Delphi Method
7. Scenario building and its verification with public opinion (Open Conference)
8. Conclusions and Final Report preparation - dissemination of the Project results

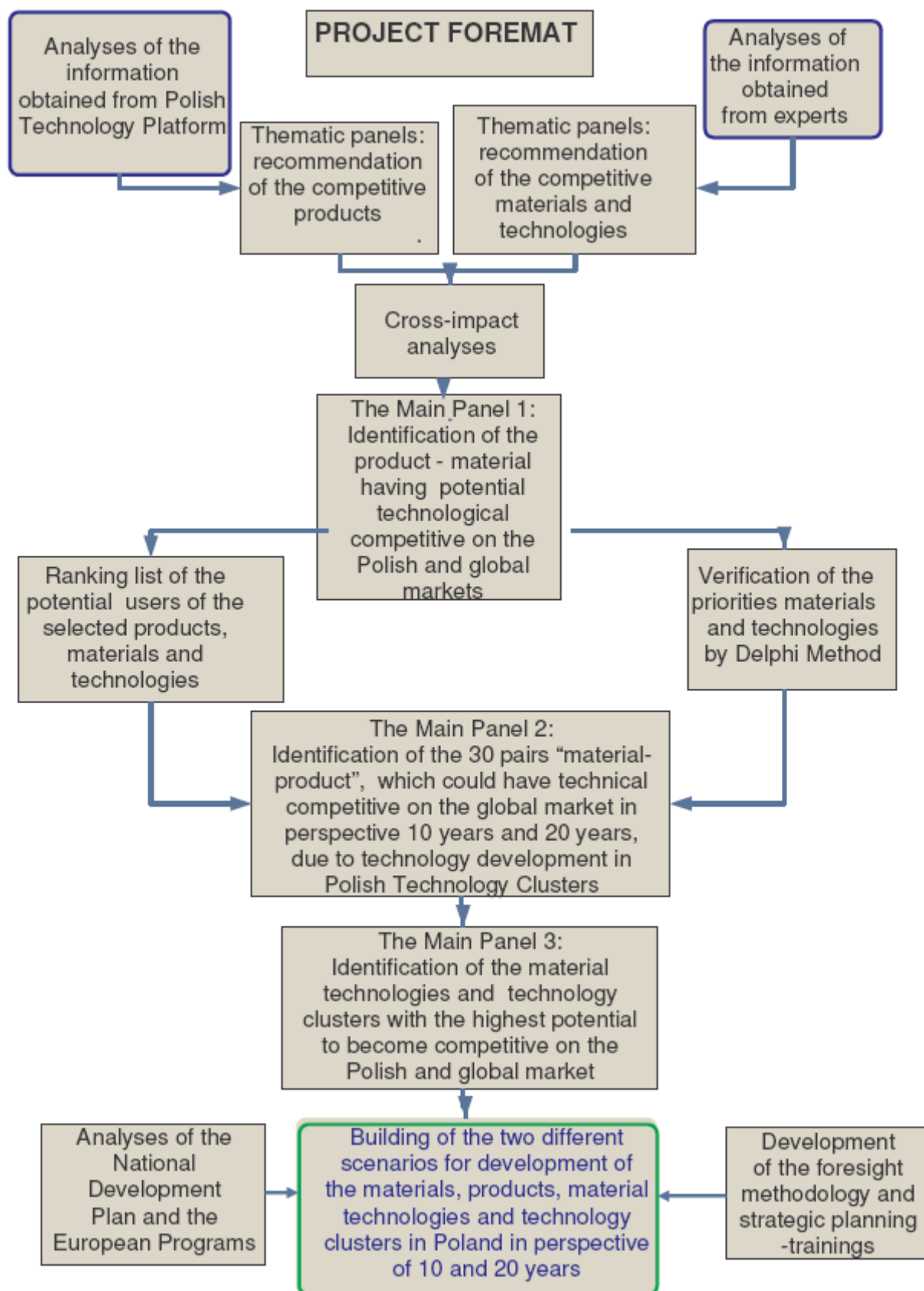
METHODOLOGY

The project will be performing with using of the foresight methodology, including instruments such as:

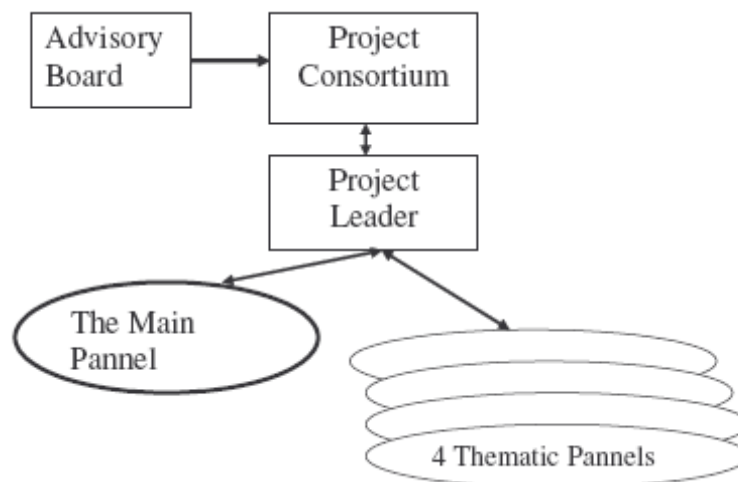
- SWOT analyses
- Prerequisite Tree
- Brain storming
- Thematic Panel of Experts
- Main Panel discussion
- Cross-Impact-Analyses
- Delphi Method
- Scenario building

PROJECT REALIZATION

The Project will be realized with use of modern foresight methodologies and the achievements the foresight exercises performed in the same area in other countries. The whole process will be conducted with support of the national and international experts. Schema of the project realization is presented below.



ORGANISATION



The foresight process will be supported by 9 persons Advisory Board, consisted with represents of the following groups:

- Policy-makers (Ministry of Economy, Ministry of Science)
- Research society (Polish Academy of Science, Foundation for Polish Science)
- Industry and business (Business Centre Club,)
- Journalists

All strategic decision will be taken up by the Project Consortium. The head of the Project Consortium will be the Project Leader – personally reposed for performing of the whole project The Project leader should have strong experience in project management and general knowledge of the foresight methodology. Moreover he should have good relationship with the authorities from Ministry of Economy and Ministry of Science.

On the operational level of the project will act The Main Panel, consisted of 11 high level experts, and four Thematic Panels, each consisted with 15 branch experts. The experts should have technical capabilities in the branch related to the research area of the Thematic Panels.

Each Thematic Panel will be coordinated by Panel Leader, having general knowledge in the research area of the panel and capability in the foresight methodology. The whole foresight process will be supported by 2 high level experts in the foresight methodology

Project 13: Technology Foresight Programme for Irkutsk Oblast (IO)

BACKGROUND

The increasing competition and globalization, and the need to be focused in world trade are factors that make the business context highly dynamic. This will demand from every economic region to be strong in certain competences and necessitate a comprehensive forward-looking developing process. The most upstream element of such a process would be the establishment of a Technology Foresight programme. It could provide inputs for the formulation of technology policies and strategies that guide the development of the technology infrastructure.

Geographic territory of the most regions of the Russian Federation is comparable with the territory of European countries. Resources and potential of most regions might be used as a base for economic independence of regions inside the country and, if they are ready, on the international markets.

As the political will of the Central Government of the Russian Federation and as an initiative of the President, it was decided to enlarge small regions of the country through the unification of neighbouring regions. The number of regions in Russia before the initiation of this programme was 89, now this number is cutting down. This process aimed at the enlargement of economic zones, the reduction of administrative component of authorities and to increase the effectiveness of all regions.

This initiative came from the top of the government and was unexpected for most of regions and local authorities. Regions do not have clear strategies for the future and, being still financially dependant on the central government and biennium budgets, they did not plan for perspective. Soviet habits and unjustified expectations for the planning process diminished the local foresight studies to pure accounting without analysis and prognosis in most regions.

RATIONALE AND OBJECTIVES

Irkutsk Region is one of a few Russian regions which is independent from the central government for already quite a long time. It is located in the southern part of Eastern Siberia in the upper basins of the Lower (Nizhnyaya) Tunguska, Angara, and Lena rivers. Lake Baikal is located in the south-eastern part of the region. Irkutsk Region has a total area of 775 000 km² (4.6% of the RF) and extends 1500 km from west to east and 1400 km from north to south. It is located in the very center of the continent and borders on the Republic of Sakha (Yakutia) in the northeast, Chita Region and the Buryat Republic in the east and south, Krasnoyarsk Territory in the northeast, and the Republic of Tuva in the southwest (Fig. 1). It is part of the East Siberian economic district.

Figure 1. Strategic Location of Irkutsk Oblast



New policy of the central government brought changes in the structure and personalities of the local government together with the idea of absorption of the Ust-Ordynsky Autonomous Area, situated in the middle of the Irkutsk Oblast, with the Oblast (Fig. 2).

Figure 2. Location of Ust-Ordynsky Autonomous Area



This decision activated the discussion about the current situation and economic perspectives of the enlarged territory. The local government presented a request to have a joint project on foresight for the enlarged Irkutsk Oblast (IO) as a part of UNIDO Technology Foresight Programme. During the UNIDO mission, the Oblast administration indicated its interest to use foresight methodologies to contribute to the economic reforms in the region with a wide participation of production sector, scientific circles and local communities.

By launching a Regional Programme on Technology Foresight for the CEE/NIS region in 2001, UNIDO has been responding to the need for a mid- and long-term development vision of the countries in the region as well as for bringing a more technology-oriented focus into the relevant national and regional knowledge-based institutions. Local authorities, interested in introducing foresight through pilot exercises, gain from the UNIDO expertise and training capacity for local foresight teams.

SETTING THE FOCUS

The main idea of the pilot project is to develop a strategy for the Irkutsk Oblast aiming at economic growth, social equity and sustainable development in the region, to identify potential areas of focus through the foresight. The areas “on the surface”:

- Infrastructure and water industry;
- Tourism near the lakes (water sources);
- Production for international markets.

To apply the technology foresight methodologies in the context of the economic development initiative and reforms. This pilot exercise should be a “good pioneer” for further studies, so we need to take into consideration the following:

- The Irkutsk Oblast has launched a new economic development initiative. The New Strategy of Irkutsk Oblast development is based on a detailed analysis of investment plans of all Oblast-based large-scale companies together with large infrastructure projects.
- Special consideration is given to Lake Baikal, which is fully located in the Irkutsk Oblast territory and is a unique source of pure water (30% of the world fresh water resources). The new economic development strategy will be implemented in line with environmental requirements and their influence on the industrial development.
- Issue of social equity and sustainable development should be introduced as one of the main parts of the foresight exercise for the region.

The main focus of the study will be made according to the priorities of the local government (main sponsor) - economic growth, social equity and sustainable development - which might be described as successful economic development and niche for the region on both country and international level.

DETERMINING THE COVERAGE

The coverage is based on the following IO Strategy and its interrelated issues:

- Further development of the Oblast natural resources potential, including mining and processing of locally available raw materials and building up adequate economic infrastructure;
- Development of knowledge-based economy on the basis of existing high scientific and educational centres in conjunction with closer cooperation with high-tech industries;
- Promotion of tourism and recreation complexes in the area of the Lake Baikal.

The first priority is given to the industrial development and related transportation infrastructure: water, mining; chemical industry. The economic development strategy is focusing on the creation of a large industrial and economic centre of the Russian Federation in Asia, which will enhance its presence in the Asia-Pacific Region.

The industrial tissue in the Irkutsk Oblast is concentrated in a few isolated sectors with a low degree of forward linkages. It also has a low impact on public goods and social infrastructure. There is also a lack of proper transportation infrastructure. Hence the reform is to create an opportunity to a better and more equitable distribution of work and wealth to the whole production sector (which should concentrate on sectors with comparative advantages) and the local population as well as construction and modernization of roads and reconstruction of the Irkutsk airport. The latter depends on decisions of the Federal Government. The new strategy assumes complex development of the Oblast with interlinkages between different sectors, including systematic trade-oriented approach based upon the local competitive products for international markets.

Taking into account that hard industry and forestry/food might need more time and expertise for analysis, it is expected that the pilot foresight exercise should focus on the international tourism in the region: development of local SMEs and production chains for these purposes. This will provide benefits for all parties and make the region visible at the international market.

TIME HORIZON

The foresight should be made for the next 10-15 years, depending on the focus. The focus areas should be chosen on the basis of SW(OT) analysis made from 3 perspectives for the Region: international, national and local. The Topic areas will be identified and the Foresight itself will be focused after that. By now there is a number of potential focus areas, which should be analysed and prioritised for the purposes of the first Foresight.

TIME FRAME:

Estimated timeframe for the pilot foresight exercise is 12-18 months, including training and capacity-building for establishment of regular foresight activities in the region.

SPONSORS

The local government as the sponsor of the exercise expects that the foresight methodology, combined with the concepts of public-private partnerships, clustering and production chain development, would allow to mobilize a larger number of stakeholders to exploit more widely and competitively a process of reforms and investments.

DETERMINING THE USERS

The main industries as well as local business representatives will be interested in the foresight exercise and implementation of its results.

Expected Target Beneficiaries/Users:

- Policy and decision makers and practitioners in technology development and innovation in the Irkutsk Oblast;
- Production sectors undergoing a reform process;
- Research and development centers;
- Federal Government, as Irkutsk Oblast has one of the greatest potentials in the country
- SMEs' representatives- to identify side effects and ideas for business development

ASSESSING PREVIOUS AND EXISTING WORK

Owing to the fact that the process of unification of 2 regions attracted a lot of attention from Media and Academy, a number of studies on the current situation and perspectives of economic development of the enlarged region were done. The pilot foresight exercise will be based on the following sources:

- Existing strategy of the main political parties in the region
- Analytical materials, prepared for the unification process
- Local/regional/federal researches and overviews, made by academics and other research institutions (RAS, Irkutsk Department, etc.)

MAPPING AVAILABLE RESOURCES

The resources should be mapped-up taking into consideration the immediate objectives of this programme, which are

- To identify focus areas of potential economic growth for the Oblast
- To introduce Foresight in the area of first priority
- In the process of targeting the first 2 objectives – to disseminate knowledge on Technology Foresight methodologies and application of Technology Foresight tools in strategic decision making for technological development.

Best practices of using foresight in enhancing competitiveness will be shown, as well as modalities of implementation of Technology Foresight initiative at the Oblast level.

Monetary Resources

Approximately € 100.000 financed by the IO Government. In-kind contributions from the interested institutions (Institute of Mathematics and Informatics etc.) are also expected. Environmental aspect and involvement of “green” organizations (protection of Baikal Lake) might bring more resources for the environmental side of the exercise.

Human Resources

- UNIDO staff for coordination and control (Project Manager and Project Coordinator, including administrative support);
- International experts – for training and leadership in the study: 2-3 persons;
- 3-5 local experts to build up capacity of around 10 experts working in the areas of technology foresight, policy and management trained on advanced Technology Foresight methodologies;
- IT support – to make the process transparent and known to the public;

- Indirect involvement of around 20 experts working in the areas of public-private partnerships and clusters,

BUILDING SUPPORT AND COMMUNICATION

This pilot exercise is initiated by the local authorities, so, political will has already been introduced to the public verbally and at the local web site of the IO administration.

Federal government pays special attention to the developments in this region, so, more efforts should be used to involve it in either in-kind or financial participation: promote IO as a “pioneer of foresight” in Russia¹⁷. This could bring respect from the international community to the region itself, as well as to the initiative of the central government (to the country).

Community will be informed about the exercise (with a possibility to get feedback) through the web of the IO Administration (already created).

Special care should be introduced in communication with the “green movement” as for its aggressive campaigns, which might damage the pilot project.

Promotion of the whole exercise and its results should be done at all 3 levels: local, national and international through: webpage and other internet resources, conferences and seminars; involvement of Media.

EXPECTED OUTCOMES

The final outcome of the foresight exercise will be:

1. list of prioritised areas/industries to be developed in the Irkutsk Oblast (SW result)
2. pilot Foresight on the area of first priority and its recommendations on efforts/resources to be used for successful development of this area
3. Knowledge centre on foresight in Irkutsk oblast: library, trained experts and awareness in public of the foresight - as a result of the pilot exercise.

METHODOLOGY AND METHODS

As this exercise could not be focused due to the complexity of the regional foresight and overall target, which is not “to develop a concrete area”, but “to have economic growth in the region”, the first action to be undertaken is to have a SW(OT) analysis done on the existing “on the surface” potential sources of the economic growth in the oblast.

After the topic areas are identified (economic, industrial, and social), the Steering committee, consisted of Researchers, Industries’ representatives and Government, will make a list of 3 areas of the highest priority. The expert panels will be created on each of these 3 areas. The expert panels will prepare scenarios on the Future of Irkutsk.

¹⁷ Evident analogy: Technology Foresight activities in different sectors of the economy have been implemented in almost every OECD country. The countries with economies in transition in Central and Eastern Europe and the NIS have become aware that Technology Foresight is a useful tool in policy formulation, planning and decision-making. Furthermore, the European Commission established a rule making Technology Foresight studies a mandatory pre-condition for countries applying for technology development funds

Project 14: Creation of Visions for Policy Making "Europe 2025 Project" – Governance Futures

RATIONALE OF THE PROJECT

The European Union faced the biggest enlargement in his history in 2004. Together with the nine new member states Slovenia become a player in the EU policy making system. New Member states are in a turning point where from the position of being "policy takers"¹⁸ now they become also policy makers. Due to the different experiences with the transition period in the last decade and long term planning in the last half a century in different New Member States it is obvious that New Member States lack vision building in relation to the policy making¹⁹ in our case EU policy making. In order to create more effective EU policy making system in the EU we will use foresight as a tool for long term vision building that will influence the EU policy making.

OBJECTIVES OF THE PROJECT

We undertake the foresight exercise in order to make/create visions for the better policy making in the three policy areas of the EU namely:

1. EU and global institution building and policy making - focus on geographical territory (international) and issue (EU in the world / development of an International Criminal Court - ICC²⁰)
2. Development of the EU internally "Beyond the Lisbon strategy" – focus on geographical territory (EU 25) & focus on issue (Lisbon strategy)
3. Further enlargement of the EU "Western Balkan Development" – focus on geographical territory (Western Balkan) and issue (WB EU external policy)

EXPECTED OUTCOME

The outcomes of the foresight exercise are expected to be a report on the development of the above mentioned three policy areas. The objectives of the Europe 2025 foresight exercise for all the three areas will be consulted and developed by the Futures Committee of the Bled Forum on Europe in the process of the development of the project (second half of 2006) feasibility study. The objectives and focus of the Foresight exercise will affect the identified EU policy makers in the three respective policy areas. The consultation with the key costumers identified will be used.

TIME HORIZON

The time horizon of the exercise is 15 years. It means that we cover the development by 2025. The usual time frame for the development of the public policy issues in the respective three fields is 10 to 20 years. We would like to look ahead for 20 years that's (scenario building) way we choose 2025. It means 19 years from 2006.

The whole process will be as follows:

Time frame 2006 Sep – 2009 march (2 years 6 months) PROVISIONAL PLAN²¹

- A. Preparation (feasibility phase) of the project: 2006 (second half),
- B. Main development of the project: 2007,
- C. Delivery of the results: March 2008
- D. Communication of the results: the rest of the 2008

¹⁸ During the preparation phase for the membership (negotiation process) the most important part for the New Member states was the adoption of the *Acquis Communautaire*.

¹⁹ Vision building (foresight) in relation to the policy making is not only missing in the New Members States or candidate Countries because it is used just and widely spread just most recently also in developed countries(last decade).

²⁰ The focus of the exercise will be the future functioning of the International Criminal Court (ICC) as an indicator of the enforcement of universal values such as as defined in The Charter of Fundamental Rights of the European Union²⁰.The Charter of Fundamental Rights of the European Union, proclaimed in Nice on 7 December 2000, summarises the common values of the Member States of the European Union. Its purpose is set out in the preamble: "it is necessary to strengthen the protection of fundamental rights in the light of changes in society, social progress and scientific and technological developments by making those rights more visible in a Charter.

²¹ The more detailed plan should be developed according to the foresight method development.

One of the important stages where the EU member states could influence the EU policy making is the EU Presidency. Slovenia will hold the EU presidency in the first six months of 2008. With a proper preparation and timing there is an opportunity to influence the long term EU policy making. The delivery of the messages from the exercise will be in 2008.

UNDERSTANDING THE SYSTEM

In order to scan three systems (see point 2 A.B.C) the Environmental Scanning method will be used. We select the broad area "Governance Futures" "to be covered" by the Bled Forum Futures Committee who is composed by policy makers, researchers and foresight practitioners in the respective fields. The BF Futures Committee is still open and will be developed during the feasibility study of the Europe 2025 Project. Here we need to understand, for instance, how the EU policy-making process works and the actors involved in the process. There is a policy making system already and we would like to improve/change this in the future with our Foresight exercise.

ASSESSING PREVIOUS AND EXISTING WORK

We are planning to analyse the think papers related to the above mentioned systems developments, historical development of the EU policies towards the three issue areas. Analyses of web pages, think papers, etc. The previous and existing work in the respective three fields could complement our foresight exercise and could be the part of it. With that we will avoid overlapping and repetition of ongoing or existing studies.

We will relate our foresight exercise with partnership – cooperation building with the existing actors in the respective fields. Existing policies and programmes will be evaluated in order that we improve the policy making in the future. With the Europe 2025 project inputs in the future (learning from the mistakes & use of best examples/practices); we will improve the policy making. Before any deep analysis done there is expected that for the points II A (International Criminal Court development) and II. C (Western Balkan EU Policy) none foresight was done. When for the EU beyond Lisbon strategy some of the areas were most probably already the subject of the foresight exercises.

DEFINING THE USERS

The main users will be the policy makers (EU and member/candidate/associate countries, relevant networks, think-tank centres, research community (institutions), and media). The three main actors are Slovenia (Government), EU relevant institutions and Bled Forum on Europe (NGO)²². Actors will be involved according to the development of the project.

The Europe 2025 Project foresight exercise will influence the agenda setting of the Bled Forum 2007 and 2008 debate. The conclusions of our foresight exercise "Europe 2025 project" will also influence the 2008 Bled Forum on Europe Declaration that will be delivered during the first EU presidency of the EU New Member State namely Slovenia.

MAPPING AVAILABLE RESOURCES

In order to carry out the foresight exercise we need the following resources:

- Human resources capacity
- Administrative capacity (infrastructure / office / web side / tel.)
- Financial support (money) and kind support (conferences / workshops facilities)
- Consulting resources (on foresight and on three policy areas development)

We are planning to get the support from the following sources:

- Slovenian Research Agency (public)
- Research Association Bled Forum on Europe (NGO)
- EU money (VII. Framework programme) (public)
- Different private companies (private)
- Different stake holders / users (to be defined)

²² Bled Forum on Europe is a regional scientific event (initiated in 1996) involving NGO's governmental institutions and business sector. Main topics of Bled Forum on Europe are the challenges Europe is facing today and in the future. According to changing topics and issues addressed by Bled Forum also the involvement of partners varied from 1996 till present.

Duration of the Foresight exercise will be 2 years and 6 months with the possibility of the extension (PROVISIONAL DRAFT).

PROJECT TEAM

The human resources for the exercise are as following:

- Managing team / 3 people (manager / lawyer / researcher / administrator)
- Research team / 1 – 2 researchers (researcher on social sciences / political sciences / EU affairs / foresight practitioner)
- Steering Committee / Programme committee / 9 people (policy makers / foresight practitioners / think-tanks)
- Partners Committee / Network Board / 5 – 7 people (it depends of partners)
- Administration support (extra for seminars and conferences / when necessary) 2-3 (administration knowledge).

BUILDING SUPPORT AND TEAM

The support needed for the foresight exercise is different:

- First (preliminary phase) it needs to be approved by the close circle of key influential people at the Slovenian Research Agency (already done).
- Second by the partners of the Bled Forum on Europe (already done).
- After this two levels and when plan will be ready there is a need to have wider political support from the key stake-holders in the country of Slovenia and abroad (EU institutions).
- Foresight exercise will be promoted after the visible project plan will be ready.
- At the early stage team will be composed by the close circle of people from the Slovenian Research Agency and Research Association Bled Forum on Europe.
- After the methodology will be chosen then the participants will be selected.

COMMUNICATION

Communication is a key process (point) necessary for the success of the project. The content of the communication varied due to the development of the project (different stages). It also means that different techniques will be used in different stages. The special communication plan will be developed where amongst the other elements different target groups will be defined. Vertical and horizontal communication channels will be considered in planning the exercise and organisation of the working groups

European Commission

EUR 22737 EN – Joint Research Centre, Institute for Prospective Technological Studies

Title: Technical Report on a Foresight Training Course

Editors: Cristiano Cagnin and Fabiana Scapolo

Luxembourg: Office for Official Publications of the European Communities

2007

EUR - Scientific and Technical Research series; ISSN 1018-5593

Abstract

This report provides an overview of a methodological approach designed in two Modules tailored to increase the learning effect and awareness rising of Foresight in New Members States and Candidate Countries (NMS and CC). A better understanding on how to best transmit Foresight knowledge and which methodological approaches can effectively contribute to this end is regarded to be a major milestone in enabling Foresight to be widespread used as a policy informing and facilitating instrument. Such methodological approach should therefore be further tested, improved and adapted both to the specific contexts and current challenges of individual countries in order to facilitate Foresight in NMS and CC.

The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.